Claim Charteneres submitted in Third Information Disclosure Statement for 10/766,488

## Claim Chart for Claim 61 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical
A2	USP2,899,669	module comprising a laser diode module to convert
A3	USP3,264,601	a laser diode electric signal to a laser diode optical
A4	USP3,332,860	signal.
A5	USP3,474,380	
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
A14	USP3,805,116	A14 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical
A16	USP3,976,877	module comprising a laser diode driver to convert serial data received from a mother board to a laser
	001 3,270,017	diode electric signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical
B2	USP4,047,242	module comprising a laser diode module to convert
В3	USP4,156,903	a laser diode electric signal to a laser diode optical signal.
B4	USP4,161,650	B4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical
B6	USP4,176,897	module comprising a laser diode module to convert
B7	USP4,217,019	a laser diode electric signal to a laser diode optical signal.
B8	USP4,217,488	B8 does not disclose, at least, an optical module comprising a laser diode driver to convert serial

		data received from a mother board to a laser diode electric signal for a laser diode.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical
B10	USP4,234,968	module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
B11	USP4,249,266	B11 through B13 do not disclose, at least, an
B12	USP4,252,402	optical module comprising a laser diode driver to
B13	USP4,257,124	convert serial data received from a mother board to a laser diode electric signal for a laser diode.
B14	USP4,268,756	B14 through B15 do not disclose, at least, an
B15	USP4,273,413	optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
B16	USP4,276,656	B16 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
C1		C1 does not disclose, at least, an optical module
ĺ	USP4,294,682	comprising a laser diode driver to convert serial
į	USP4,294,062	data received from a mother board to a laser diode
		electric signal for a laser diode.
C2		C2 does not disclose, at least, an optical module
	USP4,295,181	comprising a laser diode module to convert a laser
<u> </u>		diode electric signal to a laser diode optical signal.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical
C4		module comprising a circuit board to carry thereon
	USP4,330,870	a connector,a laser diode driver,a laser diode
		module and a photo diode module.
C5		C5 does not disclose, at least, an optical module
	USP4,345,808	comprising a laser diode module to convert a laser
		diode electric signal to a laser diode optical signal.
C6		C6 does not disclose, at least, an optical module
	USP4,347,655	comprising a circuit board to carry thereon a
ļ	0514,547,033	connector,a laser diode driver,a laser diode module
		and a photo diode module.
C7		C7 does not disclose, at least, an optical module
į	USP4,357,606	comprising a laser diode driver to convert serial
	05: 4,557,000	data received from a mother board to a laser diode
		electric signal for a laser diode.
C8		C8 does not disclose, at least, an optical module
1	USP4,360,248	comprising a laser diode module to convert a laser
		diode electric signal to a laser diode optical signal.

C9	USP4,366,565	C9 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector, a laser diode driver, a laser diode module and a photo diode module.
C10	USP4,369,494	C10 through C15 do not disclose, at least, an
C11	USP4,380,360	optical module comprising a laser diode module to
C12	USP4,388,671	convert a laser diode electric signal to a laser diode
C13	USP4,393,516	optical signal.
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	C16 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector, a laser diode driver, a laser diode module and a photo diode module

Ref	Title	Distinction between reference(s) and claim(s)
D1		D1 does not disclose, at least, an optical module
:	USP4,408,273	comprising a laser diode module to convert a laser
i		diode electric signal to a laser diode optical signal.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical
D3	USP4,427,879	module comprising a laser diode driver to convert
D4	USP4,430,699	serial data received from a mother board to a laser
	0314,430,099	diode electric signal for a laser diode.
D5		D5 does not disclose, at least, an optical module
	USP4,434,537	comprising a laser diode module to convert a laser
		diode electric signal to a laser diode optical signal.
D6		D6 does not disclose, at least, an optical module
	USP4,437,190	comprising a laser diode driver to convert serial
	051 +,+57,170	data received from a mother board to a laser diode
		electric signal for a laser diode.
D7		D7 does not disclose, at least, an optical module
	USP4,439,006	comprising a circuit board to carry thereon a
1		connector,a laser diode driver,a laser diode module
		and a photo diode module.
D8_	USP4,446,515	D8 and D9 do not disclose, at least, an optical
D9		module comprising a laser diode driver to convert
	USP4,449,244	serial data received from a mother board to a laser
		diode electric signal for a laser diode.
D10	USP4,449,784	D10 through D13 do not disclose, at least, an
D11	USP4,453,903	optical module comprising a laser diode module to
D12	USP4,459,658	convert a laser diode electric signal to a laser diode
D13	USP4,461,537	optical signal.
D14		D14 does not disclose, at least, an optical module
	USP4,470,154	comprising a laser diode driver to convert serial
		data received from a mother board to a laser diode

		electric signal for a laser diode.
D15	USP4,486,059	D15 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
D16	USP4,493,113	D16 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
E1		E1 does not disclose, at least, an optical module
	USP4,501,021	comprising a laser diode driver to convert serial
	031 4,301,021	data received from a mother board to a laser diode
		electric signal for a laser diode.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical
E3	USP4,505,035	module comprising a laser diode module to convert
E4	USP4,506,937	a laser diode electric signal to a laser diode optical
E5	USP4,510,553	signal.
E6		E6 does not disclose, at least, an optical module
	USP4,511,207	comprising a circuit board to carry thereon a
	001 4,311,207	connector,a laser diode driver,a laser diode module
		and a photo diode module.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical
E8	USP4,516,204	module comprising a laser diode module to convert
E9	USP4,519,670	a laser diode electric signal to a laser diode optical
E10	USP4,519,672	signal.
E11	USP4,519,673	
E12	USP4,522,463	
E13	USP4,526,438	ļ
E14	USP4,526,986	
E15		E15 does not disclose, at least, an optical module
	USP4,527,286	comprising a laser diode driver to convert serial
	001 1,021,200	data received from a mother board to a laser diode
		electric signal for a laser diode.
E16		E16 does not disclose, at least, an optical module
	USP4,529,266	comprising a laser diode module to convert a laser
		diode electric signal to a laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical
F2	USP4,531,810	module comprising a laser diode module to convert
F3	USP4,533,208	a laser diode electric signal to a laser diode optical signal.
F4	USP4,533,209	F4 does not disclose, at least, an optical module

F5 F6 F7 F8 F9	USP4,534,616 USP45,34,617 USP4,535,233 USP4,537,468	comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.  F5 through F8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.  F9 does not disclose, at least, an optical module
	USP4,539,476	comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical
F11	USP4,540,246	module comprising a laser diode module to convert
F12	USP4,541,036	a laser diode electric signal to a laser diode optical
F13	USP4,541,685	signal.
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1		G1 does not disclose, at least, an optical module
	USP4,544,234	comprising a laser diode module to convert a laser
		diode electric signal to a laser diode optical signal.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical
G3		module comprising a circuit board to carry thereon
	USP4,545,077	a connector,a laser diode driver,a laser diode
		module and a photo diode module
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical
G5	USP4,545,643	module comprising a laser diode module to convert
G6_	USP4,545,644	a laser diode electric signal to a laser diode optical
G7	USP4,545,645	signal.
G8	USP4,548,465	
G9		G9 does not disclose, at least, an optical module
	USP4,548,466	comprising a laser diode driver to convert serial
		data received from a mother board to a laser diode
		electric signal for a laser diode.
G10	11074 540 467	G10 does not disclose, at least, an optical module
	USP4,548,467	comprising a laser diode module to convert a laser
		diode electric signal to a laser diode optical signal.
G11		G11 does not disclose, at least, an optical module
	USP4,549,782	comprising a laser diode driver to convert serial
		data received from a mother board to a laser diode
		electric signal for a laser diode.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an

G13	USP4,550,975	optical module comprising a laser diode module to
G14	USP4,553,811	convert a laser diode electric signal to a laser diode optical signal.
G15	USP4,553,813	G15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
G16	USP4,553,814	G16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical
H2	USP4,556,281	module comprising a laser diode module to convert
H3	USP4,556,282	a laser diode electric signal to a laser diode optical
H4	USP4,557,551	signal.
H5	USP4,560,234	
Н6_	USP4,563,057	
H7	USP4,566,753	_
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an
H13	USP4,588,256	optical module comprising a laser diode module to
H14	USP4,589,728	convert a laser diode electric signal to a laser diode
H15	USP4,597,631	optical signal.
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module
I2	USP4,634,239	comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
I3	USP4,641,371	I3 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector, a laser diode driver, a laser diode module and a photo diode module
Ĭ4	USP4,647,148	I4 through I16 do not disclose, at least, an optical
<b>I</b> 5	USP4,652,976	module comprising a laser diode module to convert
I6	USP4,663,240	a laser diode electric signal to a laser diode optical

I7	USP4,663,603	signal.
I8	USP4,678,264	
19	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical
J2	USP4,762,388	module comprising a laser diode module to convert
J3	USP4,767,179	a laser diode electric signal to a laser diode optical
J4	USP4,772,931	signal.
J5	USP4,779,952	
J6	USP4,789,218	
J7	USP4,798,430	
Ј8	USP4,798,440	
Ј9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
K1		K1 does not disclose, at least, an optical module comprising a laser diode driver to convert serial
	USP4,840,451	data received from a mother board to a laser diode
		electric signal for a laser diode.
K2	USP4,844,581	K2 does not disclose, at least, an optical module comprising a circuit board to carry thereon a
	0314,044,361	connector, a laser diode driver, a laser diode module and a photo diode module.
K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical
K4	USP4,847,771	module comprising a laser diode module to convert

K5	USP4,849,944	a laser diode electric signal to a laser diode optical
K6	USP4,857,002	signal.
K7	USP4,862,327	
K8	USP4,872,212	
K9	USP4,872,736	
K10	USP4,881,789	K10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
K11	USP4,884,336	K11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
K12	USP4,897,711	K12 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an
K14	USP4,927,225	optical module comprising a laser diode module to
K15	USP4,944,568	convert a laser diode electric signal to a laser diode
K16	USP4,945,448	optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical
L2	USP4,955,817	module comprising a laser diode module to convert
L3	USP4,963,104	a laser diode electric signal to a laser diode optical
L4	USP4,967,312	signal.
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical
L7	USP4,979,794	module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical
L9	USP4,989,934	module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical
L11	USP4,991,062	module comprising a laser diode module to convert
L12	USP5,002,495	a laser diode electric signal to a laser diode optical
L13	USP5,004,434	signal.
L14	USP5,006,286	
L15	USP5,011,425	

L16 USP5,029,254	į.
L16   USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical
M2	USP5,035,641	module comprising a laser diode module to convert
M3	USP5,040,993	a laser diode electric signal to a laser diode optical
M4	USP5,041,025	signal.
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an
M7	USP5,045,635	optical module comprising a laser diode module to
M8	USP5,045,971	convert a laser diode electric signal to a laser diode
M9	USP5,046,955	optical signal.
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
N1		N1 does not disclose, at least, an optical module
	USP5,091,991	comprising a laser diode module to convert a laser
		diode electric signal to a laser diode optical signal.
N2		N2 does not disclose, at least, an optical module
	USP5,093,879	comprising a laser diode driver to convert serial
	0373,093,879	data received from a mother board to a laser diode
		electric signal for a laser diode.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical
N4	USP5,101,463	module comprising a laser diode module to convert
N5	USP5,104,243	a laser diode electric signal to a laser diode optical
N6	USP5,107,404	signal.
N7	USP5,108,294	
N8	USP5,109,453	
N9	USP5,113,467	N9 does not disclose, at least, an optical module

		comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an
N11	USP5,117,476	optical module comprising a laser diode module to
N12	USP5,118,362	convert a laser diode electric signal to a laser diode
N13	USP5,118,904	optical signal.
N14	USP5,120,578	
N15	USP5,122,893	N15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical
N17	USP5,125,849	module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
N19	USP5,132,871	N19 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
01	USP5,134,677	O1 through O3 do not disclose, at least, an optical
O2	USP5,134,679	module comprising a laser diode module to convert
O3	USP5,136,063	a laser diode electric signal to a laser diode optical signal.
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical
O5	USP5,136,603	module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
06	USP5,138,537	O6 through O8 do not disclose, at least, an optical
O7	USP5,138,678	module comprising a laser diode module to convert
O8	USP5,140,663	a laser diode electric signal to a laser diode optical signal.
09	USP5,155,786	O9 and O10 do not disclose, at least, an optical
O10	USP5,157,769	module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
011	USP5,167,139	O11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
O12	USP5,168,537	O12 does not disclose, at least, an optical module

		comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an
O14	USP5,171,167	optical module comprising a laser diode module to
O15	USP5,173,059	convert a laser diode electric signal to a laser diode
016	USP5,183,404	optical signal.
O17	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical
P2	USP5,202,536	module comprising a laser diode module to convert
P3	USP5,207,597	a laser diode electric signal to a laser diode optical
P4	USP5,212,752	signal.
P5	USP5,212,754	P5 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical
P7	USP5,225,760	module comprising a laser diode module to convert
P8	USP5,233,676	a laser diode electric signal to a laser diode optical
P9	USP5,233,674	signal.
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	P12 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
P13	USP5,247,532	P13 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector, a laser diode driver, a laser diode module and a photo diode module.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical
P15	USP5,259,054	module comprising a laser diode module to convert
P16	USP5,262,923	a laser diode electric signal to a laser diode optical signal.
P17	USP5,271,079	P17 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 does not disclose, at least, an optical module

		comprising a laser diode module to convert a laser
		diode electric signal to a laser diode optical signal.
Q2		Q2 does not disclose, at least, an optical module
	USP5,285,466	comprising a laser diode driver to convert serial
	031 3,283,400	data received from a mother board to a laser diode
		electric signal for a laser diode.
Q3		Q3 does not disclose, at least, an optical module
	USP5,285,511	comprising a laser diode module to convert a laser
		diode electric signal to a laser diode optical signal.
Q4		Q4 does not disclose, at least, an optical module
]	USP5,285,512	comprising a laser diode driver to convert serial
	001 3,203,312	data received from a mother board to a laser diode
		electric signal for a laser diode.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an optical
Q6	USP5,286,247	module comprising a laser diode module to convert
Q7	USP5,288,247	a laser diode electric signal to a laser diode optical
Q8	USP5,289,347	signal.
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical
R2	USP5,333,221	module comprising a laser diode module to convert
R3	USP5,333,225	a laser diode electric signal to a laser diode optical
	031 3,333,223	signal.
R4		R4 does not disclose, at least, an optical module
	USP5,337,391	comprising a laser diode driver to convert serial
	0313,337,391	data received from a mother board to a laser diode
		electric signal for a laser diode.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical
R6		module comprising a laser diode module to convert
	USP5,340,340	a laser diode electric signal to a laser diode optical
		signal.
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical
R8		module comprising a laser diode driver to convert
	USP5,345,530	serial data received from a mother board to a laser
		diode electric signal for a laser diode.
R9	LICDS 252 264	R9 does not disclose, at least, an optical module
	USP5,353,364	comprising a circuit board to carry thereon a

		connector, a laser diode driver, a laser diode module and a photo diode module.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an
R11	USP5,356,300	optical module comprising a laser diode module to
R12	USP5,357,402	convert a laser diode electric signal to a laser diode optical signal.
R13	USP5,361,244	R13 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an
R15	USP5,366,664	optical module comprising a laser diode module to
R16	USP5,372,515	convert a laser diode electric signal to a laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical
S2	USP5,383,793	module comprising a laser diode module to convert
S3	USP5,388,995	a laser diode electric signal to a laser diode optical
S4	USP5,390,268	signal.
S5	USP5,393,249	
S6	USP5,397,242	
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	S10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
S11	USP5,416,668	S11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical
S14	USP5,419,717	module comprising a laser diode module to convert
S15	USP5,424,573	a laser diode electric signal to a laser diode optical
S16	USP5,428,703	signal.

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial

		data received from a mother board to a laser diode
	·	electric signal for a laser diode.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical
Т3	USP5,443,390	module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
T4	USP5,446,814	T4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T6	USP5,454,080	T6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
T7	USP5,455,703	T7 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical
Т9	USP5,469,332	module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
T10	USP5,470,257	These references do not qualify as prior art.
T11	USP5,470,259	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T12	USP5,475,734	T12 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
T13	USP5,477,418	These references do not qualify as prior art.
T14	USP5,478,253	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical
T16	USP5,478,260	module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
U1		U1 does not disclose, at least, an optical module
	USP5,481,634	comprising a laser diode module to convert a laser
		diode electric signal to a laser diode optical signal.

U2	USP5,482,658	U2 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical
U4	USP5,491,613	module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
U11	USP5,506,922	U11 through U15 do not disclose, at least, an
U12	USP5,507,668	optical module comprising a laser diode module to
U13	USP5,526,235	convert a laser diode electric signal to a laser diode
U14	USP5,527,991	optical signal.
U15	USP5,534,662	These references do not qualify as prior art.
U16	USP5,535,296	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
V1		V1 does not disclose, at least, an optical module
	USP5,535,364	comprising a laser diode module to convert a laser
		diode electric signal to a laser diode optical signal.
V2	USP5,545,845	These references do not qualify as prior art.

V3	USP5,546,281	Applicants have claimed priority to Japanese
V4	USP5,547,385	Application No. 06-086691, filed on April 25, 1994, in Japan.
V5	USP5,548,641	V5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical
V8	USP5,554,037	module comprising a laser diode module to convert
V9	USP5,567,167	a laser diode electric signal to a laser diode optical signal.
V10	USP5,577,064	V10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
V11	USP5,580,269	V11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical
V14	USP5,599,595	module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art.
W2	USP5,631,998	Applicants have claimed priority to Japanese
W3	USP5,653,596	Application No. 06-086691, filed on April 25, 1994, in Japan.
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode module to convert a laser

		diode electric signal to a laser diode optical signal.
W5	USP5,675,428	These references do not qualify as prior art.
W6	USP5,687,267	Applicants have claimed priority to Japanese
W7	USP5,717,533	Application No. 06-086691, filed on April 25,
W8	USP5,724,729	1994, in Japan.
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art.
X2		Applicants have claimed priority to Japanese
	USP5,879,173	Application No. 06-086691, filed on April 25,
		1994, in Japan.
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical
X4_	EP 0 232792 A1	module comprising a laser diode module to convert
X5	EP.0 228 278	a laser diode electric signal to a laser diode optical
X6	EP.0 305112 A2	signal.
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical
X8		module comprising a laser diode driver to convert
	EP.0 413 489 A2	serial data received from a mother board to a laser
		diode electric signal for a laser diode.
X9		X9 does not disclose, at least, an optical module
	EP.0 437 161 A2	comprising a laser diode module to convert a laser
		diode electric signal to a laser diode optical signal.
X10		X10 does not disclose, at least, an optical module
	EP.0 456 298 B1	comprising a laser diode driver to convert serial
		data received from a mother board to a laser diode
3711		electric signal for a laser diode.
X11	ED 0 530 701 43	X11 does not disclose, at least, an optical module
	EP.0 530 791 A2	comprising a laser diode module to convert a laser
V10	ED 0.525 472 A1	diode electric signal to a laser diode optical signal.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an
X13	EP.0 588 014 A2	optical module comprising a laser diode driver to
X14	EP.0 600 645 A1	convert serial data received from a mother board to
3715		a laser diode electric signal for a laser diode.
X15	ED 0 (12 022 A2	X15 does not disclose, at least, an optical module
	EP.0 613 032 A2	comprising a circuit board to carry thereon a
		connector,a laser diode driver,a laser diode module

		and a photo diode module.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an
X17	EP.0 656 696 A1	optical module comprising a laser diode module to
X18	EP.0 662 259 B1	convert a laser diode electric signal to a laser diode optical signal.
X19	EP.442 608 A2	X19 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical
X21	JP.1-237783	module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
<u>Y1</u>	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical
Y2	JP.2-181710	module comprising a laser diode driver to convert
Y3	JP.2-278212	serial data received from a mother board to a laser
Y4	JP.2-87837	diode electric signal for a laser diode.
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical
Y6	JP.3-94869	module comprising a laser diode module to convert
Y7	JP.4-109593	a laser diode electric signal to a laser diode optical signal.
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical
Y9	JP.4-165312	module comprising a laser diode driver to convert
Y10	JP.4-211208	serial data received from a mother board to a laser diode electric signal for a laser diode.
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an
Y12	JP.4-229962	optical module comprising a laser diode module to
Y13	JP.4-230978	convert a laser diode electric signal to a laser diode optical signal.
Y14	JP.4-234715	Y14 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an
Y16	JP.4-50901	optical module comprising a laser diode module to
Y17	JP.4-87809	convert a laser diode electric signal to a laser diode
Y18	JP.5-052802	optical signal.
Y19	JP.5-134147	Y19 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical
Z2		module comprising a laser diode driver to convert
	JP.5-188250	serial data received from a mother board to a laser
		diode electric signal for a laser diode.
Z3		Z3 does not disclose, at least, an optical module
	JP.5-211379	comprising a laser diode module to convert a laser
		diode electric signal to a laser diode optical signal.
Z4		Z4 does not disclose, at least, an optical module
	JP.5-218581	comprising a laser diode driver to convert serial
	31.3 210301	data received from a mother board to a laser diode
		electric signal for a laser diode.
Z5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical
Z6	JP.5-70955	module comprising a laser diode module to convert
<u>Z7</u>	JP.61-158046	a laser diode electric signal to a laser diode optical
Z8	JP.61-188385	signal.
<b>Z9</b>		Z9 does not disclose, at least, an optical module
	JP.63-009325	comprising a circuit board to carry thereon a
	01.03 009323	connector,a laser diode driver,a laser diode module
		and a photo diode module
Z10	JP.63-16496	Z10 through Z13 do not disclose, at least, an
Z11	JP.63-65967	optical module comprising a laser diode module to
Z12	JP.63-65978	convert a laser diode electric signal to a laser diode
Z13	JP.63-82998	optical signal.
Z14	U-3-20458	Z14 through Z19 do not disclose, at least, an
Z15	U-3-94869	optical module comprising a laser diode module to
Z16	U-4-87809	convert a laser diode electric signal to a laser diode
Z17	U-5-052802	optical signal.
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an
AA2	U-63-16496	optical module comprising a laser diode module to
AA3	U-63-65967	convert a laser diode electric signal to a laser diode
AA4	U-63-65978	optical signal.
AA5	U-63-82998	

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.

BB2 BB3 BB4	Ronald LSoderstrom et al., "An optical Date Link using a CD laser", SPIE Vol. 1577 High Speed Fiber Networks and Channels, pp. 163-173, 1991  BCP, Inc. "Gigabits Over Multimode Optical Fiber" no date  Ronald L.Soderstrom et al., "CD laser optical Date Links for Workstation and Midrange Computers", IEEE p. 505-509, 1993.	BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
BB5	FDDI Low-Cost Fiber Phyiscal Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	BB5 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector, a laser diode driver, a laser diode module and a photo diode module
BB6	HP Module HFBR-5103, FDDI Data Sheet,http://www.hp.com/HP- COMP/fiber/hfbr5103.html,Jun.11,1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module to convert
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System".www.patents.ibm.com/tdbs/tdb?ℴ=93A +60964,April 1993	a laser diode electric signal to a laser diode optical signal.
BB8	IBM, "A Proposal for a New High Performance "OptopElectronics Enterprise Oct.1992 ANSI Meeting,Oct.13,1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode driver to convert
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	serial data received from a mother board to a laser diode electric signal for a laser diode.
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	BB10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	BB11 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Sandards?" no date.	CC3 through CC5 do not disclose, at least, an
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	optical module comprising a laser diode driver to convert serial data received from a mother board to
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922,Dec.1993.	a laser diode electric signal for a laser diode.
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	CC7 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.

CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	CC8 and CC9 do not disclose, at least, an optical module comprising a laser diode module to convert
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	a laser diode electric signal to a laser diode optical signal.
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454.definition of LED, Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
CC11	Edward R.Salmon, Encapsulation of Electronic Devices and Components, Marcel Deckker Inc., New York, 1987	CC11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conducive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode module to
DD2	HEADS UpSumitomo Electric Lightwave joins Other in Announcement, May 11,1995	convert a laser diode electric signal to a laser diode
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	optical signal.
DD4	Shortwave Opto Assembly, IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev. 1, Jan. 6, 1993	DD4 and DD5 do not disclose, at least, an optical module comprising a laser diode driver to convert
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	serial data received from a mother board to a laser diode electric signal for a laser diode.
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association, 1990.	DD6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
DD7	Ronald LSoderstrom et al., A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD) FOC/LAN'87&MFOC-WEST,pp.383-385,no date.	DD7 through DD9 do not disclose, at least, an optical module comprising a laser diode driver to
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct. 1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	convert serial data received from a mother board to a laser diode electric signal for a laser diode.
DD9	Ronald L.Soderstrom et al., Optical Components and Electronic Packaging for High Performance Optical Date Links, THE RESEARCH INVESTMENT, p. 19-28 (no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector, a laser diode driver, a laser diode module and a photo diode module
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.

	Ref	Ti41a	Distinction between reference(s) and claim(s)
ı	i Kei i	Tille	Distinction between reference(s) and claim(s)
- 1			

EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute, 1996.	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber, Van Nostrand Reinhold Publishing, 1983	optical signal.
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer date links", Fiber Optic Datacom and Computer Networks, SPIE-The International Society for Optical Engineerdings, Vol. 1577, pp. 174-181, 1988	
EE5	David A.Knodel et al.,"Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34, No.7B, Dec.1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge, IBM Technical Disclosure Bulletin, March 1987, https://www.delphion.com/tdb?o=87A%2060509 ,last visited Mar.8, 2005.	
EE9	K.P.Jackson et al., "High-Density, Array, Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings, IEEE Computer Society Press.	
EE10	TDB:Stackable Circuit Card Packaging within a Logic Cage,IBM Technical Disclosure Bulletin,Dec.1992,https://www.delphion.com/tbds/tdb?o=92A%2063485,last visited Mar.8,2005	
EE11	Jeff Hechi, The Laser Guidebook, 2nd ed., McGraw Hill, Inc., 1992	

## Claim Chart for Claim 62-65 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an
A2	USP2,899,669	optical ,module comprising a laser diode module
A3	USP3,264,601	including a laser diode, to convert a laser diode
A4	USP3,332,860	electric signal to a laser diode optical signal, said
A5	USP3,474,380	laser diode optical signal adapted for transmission
A6	USP3,497,866	to an optical fiber connected with said laser diode
A7	USP3,523,269	module, said laser diode optical signal having a data
A8	USP3,670,290	trasmission rate of 1000 Mbits/s or more.
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
A14	USP3,805,116	A14 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical
A16	USP3,976,877	module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an
B2	USP4,047,242	optical ,module comprising a laser diode module
B3		including a laser diode, to convert a laser diode
		electric signal to a laser diode optical signal, said
1 1	HGD4 156 002	laser diode optical signal adapted for transmission
	USP4,156,903	to an optical fiber connected with said laser diode
		module, said laser diode optical signal having a data
}		trasmission rate of 1000 Mbits/s or more.
B4	HGD4 161 650	B4 does not disclose, at least, an optical module
	USP4,161,650	comprising a laser diode driver to convert serial

r		data received from a mother board through a
		connector to a laser diode electric signal for a laser
		diode.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an
B6	USP4,176,897	optical ,module comprising a laser diode module
B7	051 1,170,057	including a laser diode, to convert a laser diode
"		electric signal to a laser diode optical signal, said
		laser diode optical signal adapted for transmission
	USP4,217,019	to an optical fiber connected with said laser diode
		module, said laser diode optical signal having a data
		trasmission rate of 1000 Mbits/s or more.
B8		B8 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP4,217,488	data received from a mother board through a
		connector to a laser diode electric signal for a laser
		diode.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an
B10		optical ,module comprising a laser diode module
		including a laser diode, to convert a laser diode
		electric signal to a laser diode optical signal, said
	USP4,234,968	laser diode optical signal adapted for transmission
		to an optical fiber connected with said laser diode
		module, said laser diode optical signal having a data
		trasmission rate of 1000 Mbits/s or more.
B11	USP4,249,266	B11 through B13 do not disclose, at least, an
B12	USP4,252,402	optical module comprising a laser diode driver to
B13		convert serial data received from a mother board
Ì	USP4,257,124	through a connector to a laser diode electric signal
		for a laser diode.
B14	USP4,268,756	B14 and B15 do not disclose, at least, an
B15		optical ,module comprising a laser diode module
		including a laser diode, to convert a laser diode
		electric signal to a laser diode optical signal,said
	USP4,273,413	laser diode optical signal adapted for transmission
		to an optical fiber connected with said laser diode
		module, said laser diode optical signal having a data
		trasmission rate of 1000 Mbits/s or more.
B16		B16 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP4,276,656	data received from a mother board through a
		connector to a laser diode electric signal for a laser
		diode.

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 does not disclose, at least, an optical module

	Υ	
		comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
C2	USP4,295,181	C2 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical
C4	USP4,330,870	module comprising a circuit board to carry thereon a connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
C5	USP4,345,808	C5 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
C6	USP4,347,655	C6 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
C7	USP4,357,606	C7 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
C8	USP4,360,248	C8 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
C9	USP4,366,565	C9 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector, a laser diode driver, a laser diode

		module,a photo diode module and a semiconductor integrated circuit.
C10	USP4,369,494	C10 through C15 do not disclose, at least, an
C11	USP4,380,360	optical ,module comprising a laser diode module
C12	USP4,388,671	including a laser diode, to convert a laser diode
C13	USP4,393,516	electric signal to a laser diode optical signal, said
C14	USP4,398,073	laser diode optical signal adapted for transmission
C15	USP4,398,780	to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
C16	USP4,399,563	C16 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical
D3	USP4,427,879	module comprising a laser diode driver to convert
D4	USP4,430,699	serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
D5	USP4,434,537	D5 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
D6	USP4,437,190	D6 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
D7	USP4,439,006	D7 does not disclose, at least, an optical module comprising a circuit board to carry thereon a

		connector,a laser diode driver,a laser diode
		module,a photo diode module and a semiconductor
		integrated circuit.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical
D9		module comprising a laser diode driver to convert
	11004 440 244	serial data received from a mother board through a
	USP4,449,244	connector to a laser diode electric signal for a laser
		diode.
D10	USP4,449,784	D10 through D13 do not disclose, at least, an
D11	USP4,453,903	optical ,module comprising a laser diode module
D12	USP4,459,658	including a laser diode, to convert a laser diode
D13	-	electric signal to a laser diode optical signal, said
		laser diode optical signal adapted for transmission
	USP4,461,537	to an optical fiber connected with said laser diode
	, ,	module, said laser diode optical signal having a data
		trasmission rate of 1000 Mbits/s or more.
D14		D14 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP4,470,154	data received from a mother board through a
		connector to a laser diode electric signal for a laser
		diode.
D15		D15 does not disclose, at least, an optical ,module
		comprising a laser diode module including a laser
		diode, to convert a laser diode electric signal to a
	11504 496 050	laser diode optical signal, said laser diode optical
	USP4,486,059	signal adapted for transmission to an optical fiber
		connected with said laser diode module, said laser
		diode optical signal having a data trasmission rate
		of 1000 Mbits/s or more.
D16		D16 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP4,493,113	data received from a mother board through a
		connector to a laser diode electric signal for a laser
		diode.
		· · · · · · · · · · · · · · · · · · ·

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an
E3	USP4,505,035	optical ,module comprising a laser diode module
E4	USP4,506,937	including a laser diode, to convert a laser diode

E5	USP4,510,553	electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
E6	USP4,511,207	E6 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an
E8	USP4,516,204	optical ,module comprising a laser diode module
E9	USP4,519,670	including a laser diode, to convert a laser diode
E10	USP4,519,672	electric signal to a laser diode optical signal,said
E11	USP4,519,673	laser diode optical signal adapted for transmission
E12	USP4,522,463	to an optical fiber connected with said laser diode
E13	USP4,526,438	module, said laser diode optical signal having a data
E14	USP4,526,986	trasmission rate of 1000 Mbits/s or more.
E15	USP4,527,286	E15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
E16	USP4,529,266	E16 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an
F2	USP4,531,810	optical, module comprising a laser diode module
F3	USP4,533,208	including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
F4	USP4,533,209	F4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser

		diode.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an
F6	USP45,34,617	optical ,module comprising a laser diode module
F7	USP4,535,233	including a laser diode, to convert a laser diode
F8	USP4,537,468	electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
F9	USP4,539,476	F9 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an
F11	USP4,540,246	optical ,module comprising a laser diode module
F12	USP4,541,036	including a laser diode, to convert a laser diode
F13	USP4,541,685	electric signal to a laser diode optical signal,said
F14	USP4,542,076	laser diode optical signal adapted for transmission
F15	USP4,544,231	to an optical fiber connected with said laser diode
F16	USP4,544,233	module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate
	Y100 4 5 4 5 0 5 4	of 1000 Mbits/s or more.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical
G3	USP4,545,077	module comprising a circuit board to carry thereon a connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
G4	USP4,545,642	G4 through G8 do not disclose, at least, an
G5	USP4,545,643	optical ,module comprising a laser diode module
G6	USP4,545,644	including a laser diode, to convert a laser diode
G7	USP4,545,645	electric signal to a laser diode optical signal,said
G8	USP4,548,465	laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

G9	USP4,548,466	G9 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
G10	USP4,548,467	G10 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
G11	USP4,549,782	G11 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an
G13	USP4,550,975	optical, module comprising a laser diode module
G14	USP4,553,811	including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
G15	USP4,553,813	G15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
G16	USP4,553,814	G16 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an
H2	USP4,556,281	optical, module comprising a laser diode module
H3	USP4,556,282	including a laser diode, to convert a laser diode
H4	USP4,557,551	electric signal to a laser diode optical signal, said

H5	USP4,560,234	laser diode optical signal adapted for transmission
H6	USP4,563,057	to an optical fiber connected with said laser diode
H7	USP4,566,753	module, said laser diode optical signal having a data
H8	USP4,568,145	trasmission rate of 1000 Mbits/s or more.
Н9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an
H13	USP4,588,256	optical ,module comprising a laser diode module
H14	USP4,589,728	including a laser diode, to convert a laser diode
H15	USP4,597,631	electric signal to a laser diode optical signal,said
H16	USP4,614,836	laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an
I2		optical ,module comprising a laser diode module
		including a laser diode, to convert a laser diode
		electric signal to a laser diode optical signal, said
	USP4,634,239	laser diode optical signal adapted for transmission
		to an optical fiber connected with said laser diode
		module, said laser diode optical signal having a data
		trasmission rate of 1000 Mbits/s or more.
I3		I3 does not disclose, at least, an optical module
		comprising a circuit board to carry thereon a
	USP4,641,371	connector,a laser diode driver,a laser diode
		module, a photo diode module and a semiconductor
T.4	HCD4 C47 140	integrated circuit.
<u>I4</u>	USP4,647,148	I4 through I16 do not disclose, at least, an
<u>I5</u>	USP4,652,976	optical ,module comprising a laser diode module
<u>I6</u>	USP4,663,240	including a laser diode, to convert a laser diode
I7	USP4,663,603	electric signal to a laser diode optical signal, said
<u> 18</u>	USP4,678,264	laser diode optical signal adapted for transmission
19	USP4,679,883	to an optical fiber connected with said laser diode
I10	USP4,695,106	module, said laser diode optical signal having a data
I11	USP4,697,864	trasmission rate of 1000 Mbits/s or more.
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	

I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an
J2	USP4,762,388	optical ,module comprising a laser diode module
J3	USP4,767,179	including a laser diode, to convert a laser diode
J4	USP4,772,931	electric signal to a laser diode optical signal,said
J5	USP4,779,952	laser diode optical signal adapted for transmission
J6	USP4,789,218	to an optical fiber connected with said laser diode
J7	USP4,798,430	module, said laser diode optical signal having a data
J8	USP4,798,440	trasmission rate of 1000 Mbits/s or more.
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
K1		K1 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP4,840,451	data received from a mother board through a
		connector to a laser diode electric signal for a laser
		diode.
K2		K2 does not disclose, at least, an optical module
		comprising a circuit board to carry thereon a
	USP4,844,581	connector,a laser diode driver,a laser diode
		module,a photo diode module and a semiconductor
		integrated circuit.
K3	USP4,847,711	K3 through K9 do not disclose, at least, an
K4	USP4,847,771	optical ,module comprising a laser diode module
K5	USP4,849,944	including a laser diode, to convert a laser diode
K6	USP4,857,002	electric signal to a laser diode optical signal, said
K7	USP4,862,327	laser diode optical signal adapted for transmission
K8	USP4,872,212	to an optical fiber connected with said laser diode
K9	USP4,872,736	module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

K10		K10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial
	USP4,881,789	data received from a mother board through a
		connector to a laser diode electric signal for a laser
		diode.
K11		K11 does not disclose, at least, an optical ,module
		comprising a laser diode module including a laser
		diode, to convert a laser diode electric signal to a
	11004 004 226	laser diode optical signal, said laser diode optical
	USP4,884,336	signal adapted for transmission to an optical fiber
		connected with said laser diode module, said laser
		diode optical signal having a data trasmission rate
		of 1000 Mbits/s or more.
K12		K12 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP4,897,711	data received from a mother board through a
		connector to a laser diode electric signal for a laser
		diode.
K13	USP4,906,197	K13 through K16 not disclose, at least, an
K14	USP4,927,225	optical ,module comprising a laser diode module
K15	USP4,944,568	including a laser diode, to convert a laser diode
K16		electric signal to a laser diode optical signal, said
		laser diode optical signal adapted for transmission
	USP4,945,448	to an optical fiber connected with said laser diode
		module, said laser diode optical signal having a data
		trasmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an
L2	USP4,955,817	optical ,module comprising a laser diode module
L3	USP4,963,104	including a laser diode, to convert a laser diode
L4		electric signal to a laser diode optical signal, said
		laser diode optical signal adapted for transmission
	USP4,967,312	to an optical fiber connected with said laser diode
		module, said laser diode optical signal having a data
		trasmission rate of 1000 Mbits/s or more.
L5		L5 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP4,977,329	data received from a mother board through a
		connector to a laser diode electric signal for a laser
		diode.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an

L7	USP4,979,794	optical, module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical
L9	USP4,989,934	module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
L10	USP4,990,104	L10 through L16 do not disclose, at least, an
L11	USP4,991,062	optical ,module comprising a laser diode module
L12	USP5,002,495	including a laser diode, to convert a laser diode
L13	USP5,004,434	electric signal to a laser diode optical signal, said
L14	USP5,006,286	laser diode optical signal adapted for transmission
L15	USP5,011,425	to an optical fiber connected with said laser diode
L16	USP5,029,254	module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an
M2	USP5,035,641	optical ,module comprising a laser diode module
M3	USP5,040,993	including a laser diode, to convert a laser diode
M4	USP5,041,025	electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an
M7	USP5,045,635	optical ,module comprising a laser diode module
M8	USP5,045,971	including a laser diode, to convert a laser diode
M9	USP5,046,955	electric signal to a laser diode optical signal,said
M10	USP5,060,373	laser diode optical signal adapted for transmission
M11	USP5,071,219	to an optical fiber connected with said laser diode
M12	USP5,076,656	module, said laser diode optical signal having a data
M13	USP5,076,688	trasmission rate of 1000 Mbits/s or more.
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module

	comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
M16 USP5,086,4	M16 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
N1		N1 does not disclose, at least, an optical ,module
		comprising a laser diode module including a laser
		diode, to convert a laser diode electric signal to a
	USP5,091,991	laser diode optical signal, said laser diode optical
	001 3,031,331	signal adapted for transmission to an optical fiber
		connected with said laser diode module, said laser
		diode optical signal having a data trasmission rate
		of 1000 Mbits/s or more.
N2		N2 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP5,093,879	data received from a mother board through a
		connector to a laser diode electric signal for a laser
		diode.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an
N4	USP5,101,463	optical ,module comprising a laser diode module
N5	USP5,104,243	including a laser diode, to convert a laser diode
N6	USP5,107,404	electric signal to a laser diode optical signal, said
N7	USP5,108,294	laser diode optical signal adapted for transmission
N8		to an optical fiber connected with said laser diode
	USP5,109,453	module, said laser diode optical signal having a data
7.70		trasmission rate of 1000 Mbits/s or more.
N9		N9 does not disclose, at least, an optical module
	VION 5 110 165	comprising a laser diode driver to convert serial
	USP5,113,467	data received from a mother board through a
		connector to a laser diode electric signal for a laser
1110	HGD5 116 220	diode.
N10	USP5,116,239	N10 through N14 not disclose, at least, an
N11	USP5,117,476	optical, module comprising a laser diode module
N12	USP5,118,362	including a laser diode, to convert a laser diode
N13	USP5,118,904	electric signal to a laser diode optical signal,said

N14	USP5,120,578	laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
N15	USP5,122,893	N15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an
N17	USP5,125,849	optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
N19	USP5,132,871	N19 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
01	USP5,134,677	O1 through O3 do not disclose, at least, an
O2	USP5,134,679	optical ,module comprising a laser diode module
ОЗ	USP5,136,063	including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical
O5	USP5,136,603	module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.

06	USP5,138,537	O6 through O8 do not disclose, at least, an
07	USP5,138,678	optical ,module comprising a laser diode module
O8	USP5,140,663	including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
09	USP5,155,786	O9 and O10 do not disclose, at least, an optical
O10	USP5,157,769	module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
O11	USP5,167,139	O11 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
O12	USP5,168,537	O12 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an
014	USP5,171,167	optical ,module comprising a laser diode module
O15	USP5,173,059	including a laser diode, to convert a laser diode
016	USP5,183,404	electric signal to a laser diode optical signal,said
O17	USP5,183,405	laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an
P2	USP5,202,536	optical ,module comprising a laser diode module
P3	USP5,207,597	including a laser diode, to convert a laser diode
P4	USP5,212,752	electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
P5	USP5,212,754	P5 does not disclose, at least, an optical module

[		comprising a laser diode driver to convert serial
		data received from a mother board through a
		connector to a laser diode electric signal for a laser
		diode.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an
P7	USP5,225,760	optical ,module comprising a laser diode module
P8	USP5,233,676	including a laser diode, to convert a laser diode
P9	USP5,233,674	electric signal to a laser diode optical signal, said
P10	USP5,234,353	laser diode optical signal adapted for transmission
P11	001 3,23 1,333	to an optical fiber connected with said laser diode
1 1 1	USP5,238,426	module, said laser diode optical signal having a data
	0010,200,120	trasmission rate of 1000 Mbits/s or more.
P12		P12 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP5,241,614	data received from a mother board through a
	, ,	connector to a laser diode electric signal for a laser
		diode.
P13		P13 does not disclose, at least, an optical module
		comprising a circuit board to carry thereon a
	USP5,247,532	connector,a laser diode driver,a laser diode
		module, a photo diode module and a semiconductor
		integrated circuit.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an
P15	USP5,259,054	optical ,module comprising a laser diode module
P16		including a laser diode, to convert a laser diode
		electric signal to a laser diode optical signal, said
	USP5,262,923	laser diode optical signal adapted for transmission
	031 3,202,723	to an optical fiber connected with said laser diode
		module, said laser diode optical signal having a data
		trasmission rate of 1000 Mbits/s or more.
P17		P17 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP5,271,079	data received from a mother board through a
		connector to a laser diode electric signal for a laser
		diode.

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

Q2		Q2 does not disclose, at least, an optical module
~-		comprising a laser diode driver to convert serial
	USP5,285,466	data received from a mother board through a
		connector to a laser diode electric signal for a laser
		diode.
Q3		Q3 does not disclose, at least, an optical ,module
		comprising a laser diode module including a laser
		diode, to convert a laser diode electric signal to a
	USP5,285,511	laser diode optical signal, said laser diode optical
	0575,265,511	signal adapted for transmission to an optical fiber
		connected with said laser diode module, said laser
		diode optical signal having a data trasmission rate
		of 1000 Mbits/s or more.
Q4		Q4 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP5,285,512	data received from a mother board through a
		connector to a laser diode electric signal for a laser
		diode.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an
Q6	USP5,286,247	optical ,module comprising a laser diode module
Q7	USP5,288,247	including a laser diode, to convert a laser diode
Q8	USP5,289,347	electric signal to a laser diode optical signal,said
Q9	USP5,296,813	laser diode optical signal adapted for transmission
Q10	USP5,299,089	to an optical fiber connected with said laser diode
Q11	USP5,304,069	module, said laser diode optical signal having a data
Q12	USP5,305,182	trasmission rate of 1000 Mbits/s or more.
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an
R2	USP5,333,221	optical, module comprising a laser diode module
R3		including a laser diode, to convert a laser diode
		electric signal to a laser diode optical signal, said
	HSD5 222 225	laser diode optical signal adapted for transmission
	USP5,333,225	to an optical fiber connected with said laser diode
İ		module, said laser diode optical signal having a data
		trasmission rate of 1000 Mbits/s or more.
R4		R4 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP5,337,391	data received from a mother board through a
		connector to a laser diode electric signal for a laser
		diode.

R5	USP5,337,396	R5 and R6 do not disclose, at least, an
R6		optical ,module comprising a laser diode module
		including a laser diode, to convert a laser diode
		electric signal to a laser diode optical signal, said
	USP5,340,340	laser diode optical signal adapted for transmission
		to an optical fiber connected with said laser diode
1		module, said laser diode optical signal having a data
		trasmission rate of 1000 Mbits/s or more.
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical
R8		module comprising a laser diode driver to convert
	USP5,345,530	serial data received from a mother board through a
	031 3,343,330	connector to a laser diode electric signal for a laser
		diode.
R9		R9 does not disclose, at least, an optical module
		comprising a circuit board to carry thereon a
	USP5,353,364	connector,a laser diode driver,a laser diode
		module,a photo diode module and a semiconductor
		integrated circuit.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an
R11	USP5,356,300	optical ,module comprising a laser diode module
R12		including a laser diode, to convert a laser diode
	electric signal to a laser diode optical signal, said	
	USP5,357,402	laser diode optical signal adapted for transmission
		to an optical fiber connected with said laser diode
		module, said laser diode optical signal having a data
D12		trasmission rate of 1000 Mbits/s or more.
R13		R13 does not disclose, at least, an optical module
	11005 261 244	comprising a laser diode driver to convert serial data received from a mother board through a
	USP5,361,244	connector to a laser diode electric signal for a laser
		diode.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an
R15	USP5,366,664	optical ,module comprising a laser diode module
R16	001 3,300,004	including a laser diode, to convert a laser diode
		electric signal to a laser diode optical signal, said
	USP5,372,515	laser diode optical signal adapted for transmission
1		to an optical fiber connected with said laser diode
		module, said laser diode optical signal having a data
		trasmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an
S2	USP5,383,793	optical, module comprising a laser diode module
S3	USP5,388,995	including a laser diode, to convert a laser diode
S4	USP5,390,268	electric signal to a laser diode optical signal, said

S5	USP5,393,249	laser diode optical signal adapted for transmission
S6	USP5,397,242	to an optical fiber connected with said laser diode
S7	USP5,398,154	module, said laser diode optical signal having a data
<u>S8</u>	USP5,398,295	trasmission rate of 1000 Mbits/s or more.
S9	USP5,408,384	1
S10	USP5,414,787	S10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
S11	USP5,416,668	S11 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an
S14	USP5,419,717	optical ,module comprising a laser diode module
S15	USP5,424,573	including a laser diode, to convert a laser diode
S16	USP5,428,703	electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
T1		T1 does not disclose, at least, an optical module comprising a laser diode driver to convert serial
	USP5,428,704	data received from a mother board through a connector to a laser diode electric signal for a laser diode.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an

Т3	USP5,443,390	optical, module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
T4	USP5,446,814	T4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
Т6	USP5,454,080	T6 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
Т7	USP5,455,703	T7 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an
T9	USP5,469,332	optical, module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
T10	USP5,470,257	These references do not qualify as prior art.
T11	USP5,470,259	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T12	USP5,475,734	T12 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber

		connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
T13	USP5,477,418	These references do not qualify as prior art.
T14		Applicants have claimed priority to Japanese
	USP5,478,253	Application No. 06-086691, filed on April 25,
		1994, in Japan.
T15	USP5,478,259	T15 and T16 do not disclose, at least, an
T16		optical ,module comprising a laser diode module
		including a laser diode, to convert a laser diode
		electric signal to a laser diode optical signal, said
	USP5,478,260	laser diode optical signal adapted for transmission
		to an optical fiber connected with said laser diode
		module, said laser diode optical signal having a data
		trasmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
U2	USP5,482,658	U2 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an
U4	USP5,491,613	optical, module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a

		laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
U7	USP5,499,311	This reference does not qualify as prior art.  Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an
U12	USP5,507,668	optical ,module comprising a laser diode module
U13	USP5,526,235	including a laser diode, to convert a laser diode
U14	USP5,527,991	electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
U15	USP5,534,662	These references do not qualify as prior art.
U16	USP5,535,296	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

V2	USP5,545,845	These references do not qualify as prior art.
V2 V3	USP5,546,281	Applicants have claimed priority to Japanese
V3 V4	0313,340,281	Application No. 06-086691, filed on April 25,
14	USP5,547,385	1994, in Japan.
V5		V5 does not disclose, at least, an optical ,module
• 5		comprising a laser diode module including a laser
		diode, to convert a laser diode electric signal to a
		laser diode optical signal, said laser diode optical
	USP5,548,641	signal adapted for transmission to an optical fiber
		connected with said laser diode module, said laser
		diode optical signal having a data trasmission rate
		of 1000 Mbits/s or more.
V6		This reference does not qualify as prior art.
**		Applicants have claimed priority to Japanese
	USP5,548,677	Application No. 06-086691, filed on April 25,
		1994, in Japan.
V7	USP5,554,031	V7 through V9 do not disclose, at least, an
V8	USP5,554,037	optical ,module comprising a laser diode module
V9	001 3,33 1,037	including a laser diode, to convert a laser diode
🚺		electric signal to a laser diode optical signal,said
		laser diode optical signal adapted for transmission
	USP5,567,167	to an optical fiber connected with said laser diode
		module, said laser diode optical signal having a data
		trasmission rate of 1000 Mbits/s or more.
V10		V10 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP5,577,064	data received from a mother board through a
		connector to a laser diode electric signal for a laser
		diode.
V11		V11 does not disclose, at least, an optical ,module
		comprising a laser diode module including a laser
		diode, to convert a laser diode electric signal to a
	11005 500 260	laser diode optical signal, said laser diode optical
	USP5,580,269	signal adapted for transmission to an optical fiber
		connected with said laser diode module, said laser
		diode optical signal having a data trasmission rate
		of 1000 Mbits/s or more.
V12		This reference does not qualify as prior art.
	USP5,588,850	Applicants have claimed priority to Japanese
	001 0,000,000	Application No. 06-086691, filed on April 25,
		1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an

V14	USP5,599,595	optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art.
W2	USP5,631,998	Applicants have claimed priority to Japanese
W3	USP5,653,596	Application No. 06-086691, filed on April 25, 1994, in Japan.
W4	USP5,659,459	W4 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
W5	USP5,675,428	These references do not qualify as prior art.
W6	USP5,687,267	Applicants have claimed priority to Japanese
W7	USP5,717,533	Application No. 06-086691, filed on April 25,
W8	USP5,724,729	] 1994, in Japan.
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art.
X2	USP5,879,173	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an
X4	EP 0 232792 A1	optical, module comprising a laser diode module
X5	EP.0 228 278	including a laser diode, to convert a laser diode
X6		electric signal to a laser diode optical signal, said
		laser diode optical signal adapted for transmission
	EP.0 305112 A2	to an optical fiber connected with said laser diode
		module, said laser diode optical signal having a data
		trasmission rate of 1000 Mbits/s or more.
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical
X8		module comprising a laser diode driver to convert
	EP.0 413 489 A2	serial data received from a mother board through a
	B1.0 113 103 112	connector to a laser diode electric signal for a laser
		diode.
X9		X9 does not disclose, at least, an optical ,module
		comprising a laser diode module including a laser
		diode, to convert a laser diode electric signal to a
	EP.0 437 161 A2	laser diode optical signal, said laser diode optical
		signal adapted for transmission to an optical fiber connected with said laser diode module, said laser
		diode optical signal having a data trasmission rate
		of 1000 Mbits/s or more.
X10		X10 does not disclose, at least, an optical module
Aio		comprising a laser diode driver to convert serial
	EP.0 456 298 B1	data received from a mother board through a
	B1.0 130 230 B1	connector to a laser diode electric signal for a laser
		diode.
X11		X11 does not disclose, at least, an optical ,module
1		comprising a laser diode module including a laser
		diode, to convert a laser diode electric signal to a
	ED 0 520 701 A2	laser diode optical signal, said laser diode optical
	EP.0 530 791 A2	signal adapted for transmission to an optical fiber
		connected with said laser diode module, said laser
		diode optical signal having a data trasmission rate
		of 1000 Mbits/s or more.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an
X13	EP.0 588 014 A2	optical module comprising a laser diode driver to
X14		convert serial data received from a mother board
	EP.0 600 645 A1	through a connector to a laser diode electric signal
		for a laser diode.
X15	EP.0 613 032 A2	X15 does not disclose, at least, an optical module

		comprising a circuit board to carry thereon a
		connector, a laser diode driver, a laser diode
		module, a photo diode module and a semiconductor
		integrated circuit.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an
X17	EP.0 656 696 A1	optical ,module comprising a laser diode module
X18	E1.0 030 070 A1	including a laser diode, to convert a laser diode
Alo		electric signal to a laser diode optical signal,said
		laser diode optical signal adapted for transmission
	EP.0 662 259 B1	to an optical fiber connected with said laser diode
		module, said laser diode optical signal having a data
		trasmission rate of 1000 Mbits/s or more.
X19		X19 does not disclose, at least, an optical module
Alb		comprising a laser diode driver to convert serial
İ	EP.442 608 A2	data received from a mother board through a
	L1 .442 000 A2	connector to a laser diode electric signal for a laser
		diode.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an
X21	WO 94/12/00	optical ,module comprising a laser diode module
Λ21		including a laser diode, to convert a laser diode
		electric signal to a laser diode optical signal, said
	JP.1-237783	laser diode optical signal adapted for transmission
	J1.1-25//05	to an optical fiber connected with said laser diode
1		module, said laser diode optical signal having a data
		trasmission rate of 1000 Mbits/s or more.
L		trasmission rate of 1000 Wibits/s of more.

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical
Y2	JP.2-181710	module comprising a laser diode driver to convert
<b>Y</b> 3	JP.2-278212	serial data received from a mother board through a
Y4	JP.2-87837	connector to a laser diode electric signal for a laser diode.
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an
Y6	JP.3-94869	optical ,module comprising a laser diode module
Y7	JP.4-109593	including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical
Y9	JP.4-165312	module comprising a circuit board to carry thereon
Y10		a connector,a laser diode driver,a laser diode
	JP.4-211208	module, a photo diode module and a semiconductor integrated circuit.

Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an
Y12	JP.4-229962	optical ,module comprising a laser diode module
Y13	31.4 22702	including a laser diode, to convert a laser diode
113		electric signal to a laser diode optical signal,said
		laser diode optical signal adapted for transmission
	JP.4-230978	to an optical fiber connected with said laser diode
		module, said laser diode optical signal having a data
		trasmission rate of 1000 Mbits/s or more.
Y14		Y14 does not disclose, at least, an optical module
114		comprising a laser diode driver to convert serial
	JP.4-234715	data received from a mother board through a
	J1.4-234713	connector to a laser diode electric signal for a laser
		diode.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an
	JP.4-50901	optical ,module comprising a laser diode module
Y16		including a laser diode, to convert a laser diode
Y17	JP.4-87809	electric signal to a laser diode optical signal, said
Y18		laser diode optical signal adapted for transmission
	ID 5 053903	to an optical fiber connected with said laser diode
	JP.5-052802	module, said laser diode optical signal having a data
		trasmission rate of 1000 Mbits/s or more.
V10		Y19 does not disclose, at least, an optical module
Y19		comprising a laser diode driver to convert serial
	ID 5 124147	
	JP.5-134147	data received from a mother board through a
		connector to a laser diode electric signal for a laser
		diode.

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical
Z2	JP.5-188250	module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
Z3	JP.5-211379	Z3 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
Z4	JP.5-218581	Z4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser

		11. 1
		diode.
<b>Z</b> 5	JP.5-290913	Z5 through Z8 do not disclose, at least, an
Z6	JP.5-70955	optical, module comprising a laser diode module
Z7	JP.61-158046	including a laser diode, to convert a laser diode
Z8		electric signal to a laser diode optical signal,said
		laser diode optical signal adapted for transmission
	JP.61-188385	to an optical fiber connected with said laser diode
		module, said laser diode optical signal having a data
		trasmission rate of 1000 Mbits/s or more.
Z9		Z9 does not disclose, at least, an optical module
		comprising a circuit board to carry thereon a
	JP.63-009325	connector,a laser diode driver,a laser diode
		module, a photo diode module and a semiconductor
		integrated circuit.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an
Z11	JP.63-65967	optical, module comprising a laser diode module
Z12	JP.63-65978	including a laser diode, to convert a laser diode
Z13	JP.63-82998	electric signal to a laser diode optical signal,said
Z14	U-3-20458	laser diode optical signal adapted for transmission
Z15	U-3-94869	to an optical fiber connected with said laser diode
Z16	U-4-87809	module, said laser diode optical signal having a data
Z17	U-5-052802	trasmission rate of 1000 Mbits/s or more.
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an
AA2	U-63-16496	optical module comprising a laser diode module
AA3	U-63-65967	including a laser diode, to convert a laser diode
AA4	U-63-65978	electric signal to a laser diode optical signal, said
AA5	U-63-82998	laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

BB2 BB3 BB4	Ronald LSoderstrom et al.,"An optical Date Link using a CD laser", SPIE Vol. 1577 High Speed Fiber Networks and Channels, pp. 163-173, 1991  BCP, Inc. "Gigabits Over Multimode Optical Fiber" no date  Ronald L.Soderstrom et al., "CD laser optical Date Links for Workstation and Midrange Computers", IEEE p. 505-509, 1993.	BB2 and BB4 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
BB5	FDDI Low-Cost Fiber Phyiscal Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	BB5 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
BB6	HP Module HFBR-5103, FDDI Data Sheet,http://www.hp.com/HP- COMP/fiber/hfbr5103.html,Jun.11,1998	BB6 and BB7 do not disclose, at least, an optical ,module comprising a laser diode module
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System".www.patents.ibm.com/tdbs/tdb?ℴ=93A +60964,April 1993	including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
BB8	IBM, "A Proposal for a New High Performance "OptopElectronics Enterprise Oct.1992 ANSI Meeting,Oct.13,1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode driver to convert
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	BB10 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	BB11 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser

		diode optical signal having a data trasmission rate
		of 1000 Mbits/s or more.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Sandards?" no date.	CC3 through CC5 do not disclose, at least, an
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	optical module comprising a laser diode driver to convert serial data received from a mother board
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922,Dec.1993.	through a connector to a laser diode electric signal for a laser diode.
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	CC7 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	CC8 and CC9 do not disclose, at least, an optical ,module comprising a laser diode module
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454. definition of LED, Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
CC11	Edward R.Salmon, Encapsulation of Electronic Devices and Components, Marcel Deckker Inc., New York, 1987	CC11 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conducive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD3 do not disclose, at least, an optical ,module comprising a laser diode module
DD2	HEADS UpSumitomo Electric Lightwave joins Other in Announcement, May 11,1995	including a laser diode, to convert a laser diode
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
DD4	Shortwave Opto Assembly, IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev. 1, Jan. 6, 1993	DD4 and DD5 do not disclose, at least, an optical module comprising a laser diode driver to convert
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association, 1990.	DD6 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
DD7	Ronald LSoderstrom et al., A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD) FOC/LAN'87&MFOC-WEST,pp.383-385,no date.	DD7 through DD9 do not disclose, at least, an optical module comprising a laser diode driver to
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct. 1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
DD9	Ronald L.Soderstrom et al., Optical Components and Electronic Packaging for High Performance Optical Date Links, THE RESEARCH INVESTMENT, p. 19-28 (no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	DD11 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)

EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute,1996.	
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	
Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer date links", Fiber Optic Datacom and Computer Networks, SPIE-The International Society for Optical Engineerdings, Vol. 1577, pp. 174-181, 1988		
	David A.Knodel et al.,"Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and	
EE5	Channels, SPIE-The International Society for Optical Engineering Proceedings, Vol. 991, pp. 179-182, 1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34, No.7B, Dec. 1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge, IBM Technical Disclosure Bulletin, March 1987, https://www.delphion.com/tdb?o=87A%2060509 ,last visited Mar.8,2005.	
EE9	K.P.Jackson et al., "High-Density, Array, Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings, IEEE Computer Society Press.	
EE10	TDB:Stackable Circuit Card Packaging within a Logic Cage,IBM Technical Disclosure Bulletin,Dec.1992,https://www.delphion.com/tbds/tdb?o=92A%2063485,last visited Mar.8,2005	
EE11	Jeff Hechi, The Laser Guidebook, 2nd ed., McGraw Hill, Inc., 1992	

EE1 through EE11 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

## Claim Chart for Claim 69-105 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical
A2	USP2,899,669	module comprising a laser diode module having an
A3	USP3,264,601	opening adapted for insertion of one of at least one
A4	USP3,332,860	optical fiber, said laser diode module adapted to
A5	USP3,474,380	output a laser diode optical signal to the at least one
A6	USP3,497,866	optical fiber.
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
A14	USP3,805,116	A14 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical
A16	USP3,976,877	module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical
B2	USP4,047,242	module comprising a laser diode module having an
В3	USP4,156,903	opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
B4	USP4,161,650	B4 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical
B6	USP4,176,897	module comprising a laser diode module having an

B7	USP4,217,019	opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.  B8 does not disclose, at least, an optical module
	USP4,217,488	comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical
B10	USP4,234,968	module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
B11	USP4,249,266	B11 through B13 do not disclose, at least, an
B12	USP4,252,402	optical module comprising a laser diode driver to
B13	USP4,257,124	drive a laser diode module according to serial data received from a computer through a connector.
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical
B15	USP4,273,413	module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
B16	USP4,276,656	B16 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.

Ref	Title	Distinction between reference(s) and claim(s)
C1		C1 does not disclose, at least, an optical module
	USP4,294,682	comprising a laser diode driver to drive a laser
		diode module according to serial data received
		from a computer through a connector.
C2	USP4,295,181	C2 does not disclose, at least, an optical module
		comprising a laser diode module having an opening
		adapted for insertion of one of at least one optical
		fiber, said laser diode module adapted to output a
		laser diode optical signal to the at least one optical
		fiber.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical

C4	USP4,330,870	module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.
C5	USP4,345,808	C5 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
C6	USP4,347,655	C6 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.
C7	USP4,357,606	C7 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
C8	USP4,360,248	C8 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
C9	USP4,366,565	C9 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.
C10	USP4,369,494	C10 through C16 do not disclose, at least, an
C11	USP4,380,360	optical module comprising a laser diode module
C12	USP4,388,671	having an opening adapted for insertion of one of at
C13	USP4,393,516	least one optical fiber, said laser diode module
C14	USP4,398,073	adapted to output a laser diode optical signal to the
C15	USP4,398,780	at least one optical fiber.
C16	USP4,399,563	

Ref	Title	Distinction between reference(s) and claim(s)
D1		D1 does not disclose, at least, an optical module
	USP4,408,273	comprising a laser diode module having an opening
		adapted for insertion of one of at least one optical

		C1
		fiber, said laser diode module adapted to output a
		laser diode optical signal to the at least one optical
		fiber.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical
D3	USP4,427,879	module comprising a laser diode driver to drive a
D4	USP4,430,699	laser diode module according to serial data received
	001 1, 100,000	from a computer through a connector.
D5		D5 does not disclose, at least, an optical module
		comprising a laser diode module having an opening
	USP4,434,537	adapted for insertion of one of at least one optical
	001,101,007	fiber, said laser diode module adapted to output a
		laser diode optical signal to the at least one optical
		fiber.
D6		D6 does not disclose, at least, an optical module
	USP4,437,190	comprising a laser diode driver to drive a laser
	001 1,101,170	diode module according to serial data received
		from a computer through a connector.
D7		D7 does not disclose, at least, an optical module
		comprising a semiconductor integrated circuit to
	USP4,439,006	output an electric digital signal according to a
	001 7,737,000	photodiode electric signal, a electric digital signal
		adapted for transmission as serial data to a
		computer through a connector.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical
D9		module comprising a laser diode driver to drive a
	USP4,449,244	laser diode module according to serial data received
		from a computer through a connector.
D10	USP4,449,784	D10 through D13 do not disclose, at least, an
D11	USP4,453,903	optical module comprising a laser diode module
D12	USP4,459,658	having an opening adapted for insertion of one of at
D13		least one optical fiber, said laser diode module
	USP4,461,537	adapted to output a laser diode optical signal to the
		at least one optical fiber.
D14		D14 does not disclose, at least, an optical module
	USP4,470,154	comprising a laser diode driver to drive a laser
	001 1,170,101	diode module according to serial data received
		from a computer through a connector.
D15		D15 does not disclose, at least, an optical module
		comprising a laser diode module having an opening
	USP4,486,059	adapted for insertion of one of at least one optical
	USF4,460,039	fiber, said laser diode module adapted to output a
		laser diode optical signal to the at least one optical
		fiber.
D16		D16 does not disclose, at least, an optical module
	TTOD 4 402 112	comprising a laser diode driver to drive a laser
	USP4,493,113	diode module according to serial data received

1	from a computer through a connector.
	itoni a computer infought a connector.

Ref	Title	Distinction between reference(s) and claim(s)
E1		E1 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser
	USP4,501,021	diode module according to serial data received
		from a computer through a connector.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical
E3	USP4,505,035	module comprising a laser diode module having an
E4	USP4,506,937	opening adapted for insertion of one of at least one
E5	051 1,500,557	optical fiber, said laser diode module adapted to
LJ	USP4,510,553	output a laser diode optical signal to the at least one
	.,,	optical fiber.
E6		E6 does not disclose, at least, an optical module
		comprising a semiconductor integrated circuit to
	USP4,511,207	output an electric digital signal according to a
	0314,311,207	photodiode electric signal, a electric digital signal
		adapted for transmission as serial data to a
		computer through a connector.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical
E8	USP4,516,204	module comprising a laser diode module having an
E9	USP4,519,670	opening adapted for insertion of one of at least one
E10	USP4,519,672	optical fiber, said laser diode module adapted to
E11	USP4,519,673	output a laser diode optical signal to the at least one
E12	USP4,522,463	optical fiber.
E13	USP4,526,438	
E14	USP4,526,986	
E15		E15 does not disclose, at least, an optical module
	USP4,527,286	comprising a laser diode driver to drive a laser
	(327,200	diode module according to serial data received
FIC		from a computer through a connector.
E16		E16 does not disclose, at least, an optical module comprising a laser diode module having an opening
		adapted for insertion of one of at least one optical
	USP4,529,266	fiber, said laser diode module adapted to output a
		laser diode optical signal to the at least one optical
		fiber.
L	<u> </u>	11001.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical
F2	USP4,531,810	module comprising a laser diode module having an

F3	USP4,533,208	opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
F4	USP4,533,209	F4 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical
F6	USP45,34,617	module comprising a laser diode module having an
F7	USP4,535,233	opening adapted for insertion of one of at least one
F8	USP4,537,468	optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
F9	USP4,539,476	F9 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical
F11	USP4,540,246	module comprising a laser diode module having an
F12	USP4,541,036	opening adapted for insertion of one of at least one
F13	USP4,541,685	optical fiber, said laser diode module adapted to
F14	USP4,542,076	output a laser diode optical signal to the at least one
F15	USP4,544,231	optical fiber.
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical
G3	USP4,545,077	module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical
G5	USP4,545,643	module comprising a laser diode module having an
G6	USP4,545,644	opening adapted for insertion of one of at least one
G7	USP4,545,645	optical fiber, said laser diode module adapted to
G8	USP4,548,465	output a laser diode optical signal to the at least one optical fiber.

G9		G9 does not disclose, at least, an optical module
	HCD4 549 466	comprising a laser diode driver to drive a laser
	USP4,548,466	diode module according to serial data received
		from a computer through a connector.
G10		G10 does not disclose, at least, an optical module
<b>'</b>		comprising a laser diode module having an opening
	USP4,548,467	adapted for insertion of one of at least one optical
	0354,348,407	fiber, said laser diode module adapted to output a
		laser diode optical signal to the at least one optical
		fiber.
G11		G11 does not disclose, at least, an optical module
	USP4,549,782	comprising a laser diode driver to drive a laser
	031 4,349,782	diode module according to serial data received
		from a computer through a connector.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an
G13	USP4,550,975	optical module comprising a laser diode module
G14		having an opening adapted for insertion of one of at
	USP4,553,811	least one optical fiber, said laser diode module
	0514,555,611	adapted to output a laser diode optical signal to the
		at least one optical fiber.
G15		G15 does not disclose, at least, an optical module
	USP4,553,813	comprising a laser diode driver to drive a laser
		diode module according to serial data received
		from a computer through a connector.
G16		G16 does not disclose, at least, an optical module
	USP4,553,814	comprising a laser diode module having an opening
		adapted for insertion of one of at least one optical
		fiber, said laser diode module adapted to output a
		laser diode optical signal to the at least one optical
		fiber.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical
H2	USP4,556,281	module comprising a laser diode module having an
H3	USP4,556,282	opening adapted for insertion of one of at least one
H4	USP4,557,551	optical fiber, said laser diode module adapted to
H5	USP4,560,234	output a laser diode optical signal to the at least one
H6	USP4,563,057	optical fiber.
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received

		from a computer through a connector.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an
H13	USP4,588,256	optical module comprising a laser diode module
H14	USP4,589,728	having an opening adapted for insertion of one of at
H15	USP4,597,631	least one optical fiber, said laser diode module
H16	USP4,614,836	adapted to output a laser diode optical signal to the at least one optical fiber.

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module
I2		comprising a laser diode module having an opening
		adapted for insertion of one of at least one optical
	USP4,634,239	fiber, said laser diode module adapted to output a
		laser diode optical signal to the at least one optical
<u>I3</u>		fiber.
13		I3 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to
		output an electric digital signal according to a
	USP4,641,371	photodiode electric signal, a electric digital signal
		adapted for transmission as serial data to a
		computer through a connector.
<u>I4</u>	USP4,647,148	I4 through I15 do not disclose, at least, an optical
I5	USP4,652,976	module comprising a laser diode module having an
I6	USP4,663,240	opening adapted for insertion of one of at least one
<u>I7</u>	USP4,663,603	optical fiber, said laser diode module adapted to
I8	USP4,678,264	output a laser diode optical signal to the at least one
<u>19</u>	USP4,679,883	optical fiber.
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16		I16 does not disclose, at least, an optical module
	USP4,736,100	comprising a laser diode driver to drive a laser
		diode module according to serial data received
		from a computer through a connector.

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical
J2	USP4,762,388	module comprising a laser diode module having an
J3	USP4,767,179	opening adapted for insertion of one of at least one
J4	USP4,772,931	optical fiber, said laser diode module adapted to

J5	USP4,779,952	output a laser diode optical signal to the at least one
J6	USP4,789,218	optical fiber.
J7	USP4,798,430	
Ј8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16		J16 does not disclose, at least, an optical module
	USP4,838,630	comprising a laser diode driver to drive a laser
	0314,636,030	diode module according to serial data received
		from a computer through a connector.

Ref	Title	Distinction between reference(s) and claim(s)
K1	÷	K1 does not disclose, at least, an optical module
	USP4,840,451	comprising a laser diode driver to drive a laser
	0314,640,431	diode module according to serial data received
		from a computer through a connector.
K2		K2 does not disclose, at least, an optical module
		comprising a semiconductor integrated circuit to
	USP4,844,581	output an electric digital signal according to a
1	051 4,044,561	photodiode electric signal, a electric digital signal
		adapted for transmission as serial data to a
		computer through a connector.
_K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical
K4	USP4,847,771	module comprising a laser diode module having an
K5	USP4,849,944	opening adapted for insertion of one of at least one
K6	USP4,857,002	optical fiber, said laser diode module adapted to
K7	USP4,862,327	output a laser diode optical signal to the at least one
K8	USP4,872,212	optical fiber.
K9	USP4,872,736	
K10		K10 does not disclose, at least, an optical module
	USP4,881,789	comprising a laser diode driver to drive a laser
	051 4,001,709	diode module according to serial data received
		from a computer through a connector.
K11		K11 does not disclose, at least, an optical module
		comprising a laser diode module having an opening
	USP4,884,336	adapted for insertion of one of at least one optical
	001 1,004,000	fiber, said laser diode module adapted to output a
		laser diode optical signal to the at least one optical
		fiber.

K12	USP4,897,711	K12 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an
K14	USP4,927,225	optical module comprising a laser diode module
K15	USP4,944,568	having an opening adapted for insertion of one of at
K16	USP4,945,448	least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical
L2	USP4,955,817	module comprising a laser diode module having an
L3	USP4,963,104	opening adapted for insertion of one of at least one
L4	USP4,967,312	optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical
L7	USP4,979,794	module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical
L9	USP4,989,934	module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical
L11	USP4,991,062	module comprising a laser diode module having an
L12	USP5,002,495	opening adapted for insertion of one of at least one
L13	USP5,004,434	optical fiber, said laser diode module adapted to
L14	USP5,006,286	output a laser diode optical signal to the at least one
L15	USP5,011,425	optical fiber.
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical
M2	USP5,035,641	module comprising a laser diode module having an
M3	USP5,040,993	opening adapted for insertion of one of at least one

M4	USP5,041,025	optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an
M7	USP5,045,635	optical module comprising a laser diode module
M8	USP5,045,971	having an opening adapted for insertion of one of at
M9	USP5,046,955	least one optical fiber, said laser diode module
M10	USP5,060,373	adapted to output a laser diode optical signal to the
M11	USP5,071,219	at least one optical fiber.
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.

Ref	Title	Distinction between reference(s) and claim(s)
N1		N1 does not disclose, at least, an optical module
		comprising a laser diode module having an opening
	USP5,091,991	adapted for insertion of one of at least one optical
	031 3,091,991	fiber, said laser diode module adapted to output a
		laser diode optical signal to the at least one optical
		fiber.
N2		N2 does not disclose, at least, an optical module
	USP5,093,879	comprising a laser diode driver to drive a laser
		diode module according to serial data received
		from a computer through a connector.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical
N4	USP5,101,463	module comprising a laser diode module having an
N5	USP5,104,243	opening adapted for insertion of one of at least one
N6	USP5,107,404	optical fiber, said laser diode module adapted to
N7	USP5,108,294	output a laser diode optical signal to the at least one
N8	USP5,109,453	optical fiber.
N9	USP5,113,467	N9 does not disclose, at least, an optical module

		comprising a laser diode driver to drive a laser diode module according to serial data received
		from a computer through a connector.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an
N11	USP5,117,476	optical module comprising a laser diode module
N12	USP5,118,362	having an opening adapted for insertion of one of at
N13	USP5,118,904	least one optical fiber, said laser diode module
N14	USP5,120,578	adapted to output a laser diode optical signal to the at least one optical fiber.
N15	USP5,122,893	N15 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical
N17	USP5,125,849	module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
N19	USP5,132,871	N19 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.

Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O3 do not disclose, at least, an optical
O2	USP5,134,679	module comprising a laser diode module having an
O3	USP5,136,063	opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical
O5	USP5,136,603	module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
O6	USP5,138,537	O6 through O8 do not disclose, at least, an optical
07	USP5,138,678	module comprising a laser diode module having an

O8	USP5,140,663	opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
O9	USP5,155,786	O9 and O10 do not disclose, at least, an optical
O10	USP5,157,769	module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
011	USP5,167,139	O11 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
012	USP5,168,537	O12 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an
014	USP5,171,167	optical module comprising a laser diode module
O15	USP5,173,059	having an opening adapted for insertion of one of at
016	USP5,183,404	least one optical fiber, said laser diode module
O17	USP5,183,405	adapted to output a laser diode optical signal to the at least one optical fiber.

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical
P2	USP5,202,536	module comprising a laser diode module having an
P3	USP5,207,597	opening adapted for insertion of one of at least one
P4		optical fiber, said laser diode module adapted to
	USP5,212,752	output a laser diode optical signal to the at least one
		optical fiber.
P5		P5 does not disclose, at least, an optical module
	USP5,212,754	comprising a laser diode driver to drive a laser
	031 3,212,734	diode module according to serial data received
		from a computer through a connector.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical
P7	USP5,225,760	module comprising a laser diode module having an
P8	USP5,233,676	opening adapted for insertion of one of at least one
P9	USP5,233,674	optical fiber, said laser diode module adapted to
P10	USP5,234,353	output a laser diode optical signal to the at least one
P11	USP5,238,426	optical fiber.
P12	USP5,241,614	P12 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.

P13	USP5,247,532	P13 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical
P15	USP5,259,054	module comprising a laser diode module having an
P16	USP5,262,923	opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
P17	USP5,271,079	P16 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
Q2	USP5,285,466	Q2 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
Q3	USP5,285,511	Q3 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
Q4	USP5,285,512	Q4 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an optical
Q6	USP5,286,247	module comprising a laser diode module having an
Q7	USP5,288,247	opening adapted for insertion of one of at least one
Q8	USP5,289,347	optical fiber, said laser diode module adapted to
Q9	USP5,296,813	output a laser diode optical signal to the at least one
Q10	USP5,299,089	optical fiber.
Q11	USP5,304,069	

Q12	USP5,305,182
Q13	USP5,311,408
Q14	USP5,315,679
Q15	USP5,317,663
Q16	USP5,321,819

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical
R2	USP5,333,221	module comprising a laser diode module having an
R3		opening adapted for insertion of one of at least one
	11005 222 225	optical fiber, said laser diode module adapted to
	USP5,333,225	output a laser diode optical signal to the at least one
		optical fiber.
R4		R4 does not disclose, at least, an optical module
	USP5,337,391	comprising a laser diode driver to drive a laser
	0373,337,331	diode module according to serial data received
_		from a computer through a connector.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical
R6		module comprising a laser diode module having an
		opening adapted for insertion of one of at least one
1	USP5,340,340	optical fiber, said laser diode module adapted to
		output a laser diode optical signal to the at least one
		optical fiber.
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical
R8		module comprising a laser diode driver to drive a
	USP5,345,530	laser diode module according to serial data
		received from a computer through a connector.
R9		R9 does not disclose, at least, an optical module
		comprising a semiconductor integrated circuit to
	USP5,353,364	output an electric digital signal according to a
		photodiode electric signal, a electric digital signal
		adapted for transmission as serial data to a
7.10	1100 2 0 2 0 1	computer through a connector.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an
R11	USP5,356,300	optical module comprising a laser diode module
R12		having an opening adapted for insertion of one of
	USP5,357,402	at least one optical fiber, said laser diode module
		adapted to output a laser diode optical signal to the
D12		at least one optical fiber.
R13		R13 does not disclose, at least, an optical module
	USP5,361,244	comprising a laser diode driver to drive a laser diode module according to serial data received
		from a computer through a connector.
R14	USD5 261 219	R14 through R16 do not disclose, at least, an
	USP5,361,318	
R15	USP5,366,664	optical module comprising a laser diode module

R16	R16 USP5,372,515	having an opening adapted for insertion of one of
		at least one optical fiber, said laser diode module
		adapted to output a laser diode optical signal to the
		at least one optical fiber.

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical
S2	USP5,383,793	module comprising a laser diode module having an
S3	USP5,388,995	opening adapted for insertion of one of at least one
S4	USP5,390,268	optical fiber, said laser diode module adapted to
S5 -	USP5,393,249	output a laser diode optical signal to the at least one
S6	USP5,397,242	optical fiber.
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10		S10 does not disclose, at least, an optical module
	USP5,414,787	comprising a laser diode driver to drive a laser
	031 3,414,767	diode module according to serial data received
		from a computer through a connector.
S11		S11 does not disclose, at least, an optical module
		comprising a laser diode module having an opening
	USP5,416,668	adapted for insertion of one of at least one optical
		fiber, said laser diode module adapted to output a
		laser diode optical signal to the at least one optical
		fiber.
S12		S12 does not disclose, at least, an optical module
	USP5,416,870	comprising a laser diode driver to drive a laser
	0813,110,070	diode module according to serial data received
		from a computer through a connector.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical
S14	USP5,419,717	module comprising a laser diode module having an
S15	USP5,424,573	opening adapted for insertion of one of at least one
S16		optical fiber, said laser diode module adapted to
	USP5,428,703	output a laser diode optical signal to the at least one
		optical fiber.

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical

T3		module comprising a laser diode module having an
	USP5,443,390	opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
T4	USP5,446,814	R4 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T6	USP5,454,080	T6 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
T7	USP5,455,703	T7 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical
Т9	USP5,469,332	module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
T10	USP5,470,257	These references do not qualify as prior art.
T11	USP5,470,259	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T12	USP5,475,734	T12 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
T13	USP5,477,418	These references do not qualify as prior art.
T14	USP5,478,253	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical

T16	USP5,478,260	module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one
		optical fiber.

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
U2	USP5,482,658	U2 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical
U4	USP5,491,613	module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

U10	USP5,506,921	U10 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an
U12	USP5,507,668	optical module comprising a laser diode module
U13	USP5,526,235	having an opening adapted for insertion of one of
U14	USP5,527,991	at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
U15	USP5,534,662	These references do not qualify as prior art.
U16	USP5,535,296	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
V1		V1 does not disclose, at least, an optical module
		comprising a laser diode module having an opening
	USP5,535,364	adapted for insertion of one of at least one optical
	001 3,333,301	fiber, said laser diode module adapted to output a
		laser diode optical signal to the at least one optical
		fiber.
V2	USP5,545,845	These references do not qualify as prior art.
V3	USP5,546,281	Applicants have claimed priority to Japanese
V4	USP5,547,385	Application No. 06-086691, filed on April 25,
	001 3,3 17,300	1994, in Japan.
V5		V5 does not disclose, at least, an optical module
		comprising a laser diode module having an opening
	USP5,548,641	adapted for insertion of one of at least one optical
		fiber, said laser diode module adapted to output a
		laser diode optical signal to the at least one optical
		fiber.
V6		This reference does not qualify as prior art.
	USP5,548,677	Applicants have claimed priority to Japanese
	051 5,546,077	Application No. 06-086691, filed on April 25,
		1994, in Japan.
V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical
V8	USP5,554,037	module comprising a laser diode module having an
V9		opening adapted for insertion of one of at least one
	USP5,567,167	optical fiber, said laser diode module adapted to
	031 5,507,107	output a laser diode optical signal to the at least one
		optical fiber.
V10		V10 does not disclose, at least, an optical module
	USP5,577,064	comprising a laser diode driver to drive a laser
		diode module according to serial data received

		from a computer through a connector.
V11	USP5,580,269	V11 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical
	, , , , , , , , , , , , , , , , , , , ,	fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical
V14	USP5,599,595	module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art.
W2	USP5,631,998	Applicants have claimed priority to Japanese
W3	USP5,653,596	Application No. 06-086691, filed on April 25, 1994, in Japan.
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
W5	USP5,675,428	These references do not qualify as prior art.
W6	USP5,687,267	Applicants have claimed priority to Japanese
W7	USP5,717,533	Application No. 06-086691, filed on April 25,
W8	USP5,724,729	1994, in Japan.
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	

W13	USP5,767,999
W14	USP5,779,504
W15	USP5,797,771
W16	USP5,836,774

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art.
X2	USP5,879,173	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical
X4	EP 0 232792 A1	module comprising a laser diode module having an
X5	EP.0 228 278	opening adapted for insertion of one of at least one
X6		optical fiber, said laser diode module adapted to
	EP.0 305112 A2	output a laser diode optical signal to the at least one
		optical fiber.
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical
X8		module comprising a laser diode driver to drive a
	EP.0 413 489 A2	laser diode module according to serial data
		received from a computer through a connector.
X9		X9 does not disclose, at least, an optical module
		comprising a laser diode module having an opening
	EP.0 437 161 A2	adapted for insertion of one of at least one optical
		fiber, said laser diode module adapted to output a
		laser diode optical signal to the at least one optical
3710		fiber.
X10		X10 does not disclose, at least, an optical module
	EP.0 456 298 B1	comprising a laser diode driver to drive a laser
		diode module according to serial data received from a computer through a connector.
X11		X11 does not disclose, at least, an optical module
A11		comprising a laser diode module having an opening
		adapted for insertion of one of at least one optical
i.	EP.0 530 791 A2	fiber, said laser diode module adapted to output a
		laser diode optical signal to the at least one optical
		fiber.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an
X13	EP.0 588 014 A2	optical module comprising a laser diode driver to
X14		drive a laser diode module according to serial data
	EP.0 600 645 A1	received from a computer through a connector.
X15		X15 does not disclose, at least, an optical module
	EP.0 613 032 A2	comprising a semiconductor integrated circuit to
		output an electric digital signal according to a
		photodiode electric signal, a electric digital signal
		adapted for transmission as serial data to a

		computer through a connector.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an
X17	EP.0 656 696 A1	optical module comprising a laser diode module
X18	EP.0 662 259 B1	having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
X19	EP.442 608 A2	X19 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical
X21	JP.1-237783	module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical
Y2	JP.2-181710	module comprising a laser diode driver to drive a
Y3	JP.2-278212	laser diode module according to serial data
Y4	JP.2-87837	received from a computer through a connector.
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical
Y6	JP.3-94869	module comprising a laser diode module having an
Y7	JP.4-109593	opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical
Y9	JP.4-165312	module comprising a laser diode driver to drive a
Y10	JP.4-211208	laser diode module according to serial data received from a computer through a connector.
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an
Y12	JP.4-229962	optical module comprising a laser diode module
Y13	JP.4-230978	having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
Y14	JP.4-234715	Y14 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an
Y16	JP.4-50901	optical module comprising a laser diode module

Y17	JP.4-87809	having an opening adapted for insertion of one of
Y18	JP.5-052802	at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
Y19	JP.5-134147	Y19 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.

Z1	Ref	Title	Distinction between reference(s) and claim(s)
module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.  Z3 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode optical signal to the at least one optical fiber.  Z4 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.  Z5 JP.5-290913 Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module having a opening adapted for insertion of one of at least on optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least on optical fiber.  Z9 JP.61-158046 opening adapted for insertion of one of at least on optical fiber.  Z9 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.  Z10 JP.63-16496 Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted for insertion of one of at least one optical fiber, said laser diode module adapted for photodiode electric digital signal adapted for insertion of one of at least one optical fiber, said laser diode module adapted for unsertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.		JP.5-152607	
Treceived from a computer through a connector.	Z2		module comprising a laser diode driver to drive a
Z3 does not disclose, at least, an optical module comprising a laser diode module having an openin adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optica fiber.  Z4 Z4 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.  Z5 JP.5-290913 Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module having a opening adapted for insertion of one of at least on optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least or optical fiber.  Z9 Z9 Z9 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.  Z10 JP.63-16496 Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least on optical fiber.  Z10 JP.63-65967 JP.63-65978 at least one optical fiber, said laser diode module adapted to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.  Z10 JP.63-65967 JP.63-65968 at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.		JP.5-188250	laser diode module according to serial data
comprising a laser diode module having an openin adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optica fiber.  Z4 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.  Z5 JP.5-290913 Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module having a opening adapted for insertion of one of at least on optical fiber, said laser diode module adapted to output a laser diode module fiber, said laser diode module having a opening adapted for insertion of one of at least or optical fiber.  Z9 Definition of one of at least on optical fiber, said laser diode module dapted to output a laser diode optical signal to the at least or optical fiber.  Z9 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.  Z10 JP.63-16496 Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.			received from a computer through a connector.
adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optica fiber.  Z4	Z3		1
fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.  Z4 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.  Z5 JP.5-290913 Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module having a opening adapted for insertion of one of at least on optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least or optical fiber.  Z9 Z9 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.  Z10 JP.63-16496 Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.			
Inter, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.  Z4 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.  Z5 JP.5-290913  Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module having a opening adapted for insertion of one of at least on optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least or optical fiber.  Z9 DP.61-188385  Z9 DP.63-009325  Z9 DP.63-009325  Z9 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.  Z10 JP.63-16496  Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.		   IP 5-211379	
fiber.  Z4 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.  Z5 JP.5-290913  Z6 JP.5-70955  Z7 JP.61-158046  Z8 opening adapted for insertion of one of at least on optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least or optical fiber.  Z9 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.  Z10 JP.63-16496  Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least on optical fiber.  Z10 JP.63-65967  Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.  Z10 JP.63-65967  Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module according to a photodiode electric signal, a electric digital signal according to a photodiode electric signal, a electric digital signal according to a photodiode electric signal, a electric digital signal according to a photodiode electric signal, a electric digital signal according to a photodiode electric signal, a electric digital signal according to a photodiode electric signal, a electric digital signal according to a photodiode electric signal, a electric digital signal according to a photodiode electric signal, a electric digital signal according to a photodiode electric signal,		31.3-211379	1 '
Z4 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.    Z5 JP.5-290913			1 2
JP.5-218581  comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.  Z5 JP.5-290913  Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module having a opening adapted for insertion of one of at least on optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least or optical fiber.  Z9 JP.61-188385  Z9 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.  Z10 JP.63-16496  Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode module adapted for insertion of one of a least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.			
diode module according to serial data received from a computer through a connector.  Z5 JP.5-290913 Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module having a opening adapted for insertion of one of at least on optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least or optical fiber.  Z9 Z9 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.  Z10 JP.63-16496 Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.	Z4		1
diode module according to serial data received from a computer through a connector.  Z5 JP.5-290913 Z6 JP.5-70955     module comprising a laser diode module having a opening adapted for insertion of one of at least on optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least or optical fiber.  Z9 Z9 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.  Z10 JP.63-16496 Z11 JP.63-65967 Z12 JP.63-65978 Aving an opening adapted for insertion of one of at least one optical fiber.  Z14 U-3-20458 Z15 U-3-94869  diode module according to a optical module comprising a laser diode module adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.		JP.5-218581	1 1 5
Z5 JP.5-290913   Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module having a opening adapted for insertion of one of at least on optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least or optical fiber.    Z9			
Z6JP.5-70955module comprising a laser diode module having a opening adapted for insertion of one of at least on optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least or 	7.5	TD 5 000012	
Z7 JP.61-158046  Z8 JP.61-188385  Z9 Opening adapted for insertion of one of at least on optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least or optical fiber.  Z9 Z9 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.  Z10 JP.63-16496  Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.			
Description of the process of the pr			1 0
JP.61-188385  Output a laser diode optical signal to the at least or optical fiber.  Z9 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.  Z10 JP.63-16496  Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.	<u> </u>	JP.61-158046	
Z9 Z9 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.  Z10 JP.63-16496 Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module laving an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the teast one optical fiber.	Z8	ID (1.199295	
Z9 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.  Z10 JP.63-16496  Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to that U-3-20458  Z15 U-3-94869  Z9 does not disclose, at least, an optical module comprising a lacer diode module adapted for insertion of one of at least one optical fiber, said laser diode optical signal to that least one optical fiber.		JP.01-188383	
JP.63-009325    Comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.    Z10	70		· · · · · · · · · · · · · · · · · · ·
JP.63-009325  output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.  Z10 JP.63-16496  Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to th at least one optical fiber.	Ly		
photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.  Z10 JP.63-16496 Z11 JP.63-65967 Z12 JP.63-65978 Z13 JP.63-82998 Z14 U-3-20458 Z15 U-3-94869  photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.  Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.			
adapted for transmission as serial data to a computer through a connector.  Z10 JP.63-16496 Z11 JP.63-65967 Z12 JP.63-65978 Z13 JP.63-82998 Z14 U-3-20458 Z15 U-3-94869  adapted for transmission as serial data to a computer through a connector.  Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.		JP.63-009325	
computer through a connector.  Z10 JP.63-16496 Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of 213 JP.63-82998 Z14 U-3-20458 Z15 U-3-94869  computer through a connector.  Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.			
Z10JP.63-16496Z10 through Z19 do not disclose, at least, anZ11JP.63-65967optical module comprising a laser diode moduleZ12JP.63-65978having an opening adapted for insertion of one ofZ13JP.63-82998at least one optical fiber, said laser diode moduleZ14U-3-20458adapted to output a laser diode optical signal to thZ15U-3-94869at least one optical fiber.			I •
Z11JP.63-65967optical module comprising a laser diode moduleZ12JP.63-65978having an opening adapted for insertion of one ofZ13JP.63-82998at least one optical fiber, said laser diode moduleZ14U-3-20458adapted to output a laser diode optical signal to thZ15U-3-94869at least one optical fiber.	Z10	JP.63-16496	
Z13JP.63-82998at least one optical fiber, said laser diode moduleZ14U-3-20458adapted to output a laser diode optical signal to thZ15U-3-94869at least one optical fiber.	Z11	JP.63-65967	optical module comprising a laser diode module
Z14 U-3-20458 adapted to output a laser diode optical signal to the at least one optical fiber.	Z12	JP.63-65978	having an opening adapted for insertion of one of
Z15 U-3-94869 at least one optical fiber.	Z13	JP.63-82998	· · · · · · · · · · · · · · · · · · ·
213 0 3 7 1007	Z14	U-3-20458	adapted to output a laser diode optical signal to the
71.6 T. 4.05000	Z15	U-3-94869	at least one optical fiber.
Z16   U-4-87809	Z16	U-4-87809	
Z17 U-5-052802	Z17	U-5-052802	
Z18 U-5-70955	Z18	U-5-70955	

710 TT (1 15004)	
Z19   U-61-158046	1
217   0 01 1500 10	
	<del></del>

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an
AA2	U-63-16496	optical module comprising a laser diode module
AA3	U-63-65967	having an opening adapted for insertion of one of
AA4	U-63-65978	at least one optical fiber, said laser diode module
AA5	U-63-82998	adapted to output a laser diode optical signal to the at least one optical fiber.

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
BB2	Ronald LSoderstrom et al.,"An optical Date Link using a CD laser", SPIE Vol. 1577 High Speed Fiber Networks and Channels, pp. 163-173, 1991	BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode driver to
BB3	BCP,Inc."Gigabits Over Multimode Optical Fiber"no date	drive a laser diode module according to serial data
BB4	Ronald L.Soderstrom et al., "CD laser optical Date Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	received from a computer through a connector.
BB5	FDDI Low-Cost Fiber Phyiscal Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	BB5 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.
BB6	HP Module HFBR-5103, FDDI Data Sheet,http://www.hp.com/HP- COMP/fiber/hfbr5103.html,Jun.11,1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module having an
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System".www.patents.ibm.com/tdbs/tdb?ℴ=93A +60964,April 1993	opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
BB8	IBM, "A Proposal for a New High Performance "OptopElectronics Enterprise Oct.1992 ANSI Meeting,Oct.13,1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode driver to drive a
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	laser diode module according to serial data received from a computer through a connector.
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	BB10 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.

BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver",Electronic Engineering Times,Aug.1993.	BB11 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
------	--	--

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Sandards?" no date.	CC3 through CC5 do not disclose, at least, an
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	optical module comprising a laser diode driver to drive a laser diode module according to serial data
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	received from a computer through a connector.
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	CC7 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	CC8 and CC9 do not disclose, at least, an optical module comprising a laser diode module having an
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454.definition of LED, Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
CC11	Edward R.Salmon, Encapsulation of Electronic Devices and Components, Marcel Deckker Inc., New York, 1987	CC11 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical

	~1
1	I tiber
j	11001.

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conducive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode module
DD2	HEADS UpSumitomo Electric Lightwave joins Other in Announcement, May 11,1995	having an opening adapted for insertion of one of at
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
DD4	Shortwave Opto Assembly, IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev. 1, Jan. 6, 1993	DD4 and DD5 do not disclose, at least, an optical module comprising a laser diode driver to drive a
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	laser diode module according to serial data received from a computer through a connector.
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.	DD6 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
DD7	Ronald LSoderstrom et al., A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD) FOC/LAN'87&MFOC-WEST,pp.383-385,no date.	DD7 through DD9 do not disclose, at least, an optical module comprising a laser diode driver to
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	drive a laser diode module according to serial data received from a computer through a connector.
DD9	Ronald L.Soderstrom et al., Optical Components and Electronic Packaging for High Performance Optical Date Links, THE RESEARCH INVESTMENT, p. 19-28 (no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute, 1996.	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode module

EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber,Van Nostrand	ha
	Reinhold Publishing,1983	lea
	"Transmitter/receiver assembly simplifies use of fibre	ad
EE3	optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	at
	Ronald L.Soderstrom et al., "CD laser as a fiber optic	
	source for computer date links", Fiber Optic Datacom	ļ
EE4	and Computer Networks, SPIE-The International	
	Society for Optical Engineerdings, Vol. 1577, pp. 174-	i
	181,1988	1
	David A.Knodel et al.,"Open Fibre	
	Control,a laser safety interlock	1
EE5	technique", High-Speed Fiber Networks and	
LLJ	Channels, SPIE-The International Society	
	for Optical Engineering	
	Proceedings, Vol. 991, pp. 179-182, 1992	
	"IBM Technical Disclosure Bulletin,	
EE6	Electrostatic Dissipative Enclosed	l
	Connector", Vol.34, No.7B, Dec.1991	
	"High Reliability SW Laser For Optical Data Links",	1
EE7	LEOS '93 Conference Proceedings, IEEE Lasers and	
	Electro-Optics Society 1993 Annual Meeting; Minimizing Electrostatic Discharge to a	4
	Cartridge, IBM Technical Disclosure Bulletin, March	ļ
EE8	1987,https://www.delphion.com/tdb?o=87A%2060509	
	,last visited Mar.8,2005.	<u> </u>
	K.P.Jackson et al.,"High-Density, Array, Optical	
EE9	Interconnects for Multi-Chip Module Conference	
	MCMC-92 Proceedings, IEEE Computer Society Press.	l
	TDB:Stackable Circuit Card Packaging	1
	within a Logic Cage, IBM Technical	
EE10	Disclosure	
	Bulletin,Dec.1992,https://www.delphion.co	
	m/tbds/tdb?o=92A%2063485,last visited	
	Mar.8,2005  Jeff Hechi, The Laser Guidebook,2nd	1
EE11	ed.,McGraw Hill,Inc.,1992	
	cu.,ivicoraw IIIII,IIIc., 1772	ــــــــــــــــــــــــــــــــــــــ

having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.

## Claim Chart for Claims 106-121 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical
A2	USP2,899,669	module comprising a laser diode module to convert
A3	USP3,264,601	a laser diode electrical signal into a laser diode
A4	USP3,332,860	optical signal and transmit the laser diode optical
A5	USP3,474,380	signal, which is transmitted at a data transmission
A6	USP3,497,866	rate of 1000Mbits/s or more.
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
A14	USP3,805,116	A14 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
A15	USP3,809,908	A15 through A16 do not disclose, at least, an
A16	USP3,976,877	optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical
B2	USP4,047,242	module comprising a laser diode module to convert
B3		a laser diode electrical signal into a laser diode
	LICDA 156 002	optical signal and transmit the laser diode optical
	USP4,156,903	signal, which is transmitted at a data transmission
		rate of 1000Mbits/s or more.
B4		B4 does not disclose, at least, an optical module
	USP4,161,650	comprising a laser diode electrical signal converter
	03F4,101,030	to convert serial data, received from a mother
		board, into a laser diode electrical signal.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical
В6	USP4,176,897	module comprising a laser diode module to convert

B7		a laser diode electrical signal into a laser diode
	USP4,217,019	optical signal and transmit the laser diode optical
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	signal, which is transmitted at a data transmission
		rate of 1000Mbits/s or more.
B8		B8 does not disclose, at least, an optical module
	USP4,217,488	comprising a laser diode electrical signal converter
	( )	to convert serial data, received from a mother
		board, into a laser diode electrical signal.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical
B10		module comprising a laser diode module to convert
		a laser diode electrical signal into a laser diode
	USP4,234,968	optical signal and transmit the laser diode optical
į		signal, which is transmitted at a data transmission
		rate of 1000Mbits/s or more.
B11	USP4,249,266	B11 through B13 do not disclose, at least, an
B12	USP4,252,402	optical module comprising a laser diode electrical
B13		signal converter to convert serial data, received
	USP4,257,124	from a mother board, into a laser diode electrical
		signal.
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical
B15		module comprising a laser diode module to convert
		a laser diode electrical signal into a laser diode
	USP4,273,413	optical signal and transmit the laser diode optical
		signal, which is transmitted at a data transmission
		rate of 1000Mbits/s or more.
B16		B16 does not disclose, at least, an optical module
	USP4,276,656	comprising a laser diode electrical signal converter
	001 4,270,000	to convert serial data, received from a mother
		board, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
C1		C1 does not disclose, at least, an optical module
	HGD4 204 (92	comprising a laser diode electrical signal converter
	USP4,294,682	to convert serial data, received from a mother
		board, into a laser diode electrical signal.
C2	USP4,295,181	C2 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000Mbits/s or more.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical

C4		module comprising a single circuit board, on which
C4		
		a serial connector and a laser diode electrical signal
	USP4,330,870	converter are mounted and to which a laser diode
		and a photo diode module are electrically
		connected to a first edge of the circuit board.
C5		C5 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	USP4,345,808	diode electrical signal into a laser diode optical
	051 1,5 15,000	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000Mbits/s or more.
C6		C6 does not disclose, at least, an optical module
		comprising a single circuit board, on which a serial
	HICDA 247 655	connector and a laser diode electrical signal
	USP4,347,655	converter are mounted and to which a laser diode
		and a photo diode module are electrically
		connected to a first edge of the circuit board.
C7		C7 does not disclose, at least, an optical module
	HGD 4 257 COC	comprising a laser diode electrical signal converter
	USP4,357,606	to convert serial data, received from a mother
		board, into a laser diode electrical signal.
C8		C8 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
	USP4,360,248	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000Mbits/s or more.
C9		C9 does not disclose, at least, an optical module
		comprising a single circuit board, on which a serial
	USP4,366,565	connector and a laser diode electrical signal
		converter are mounted and to which a laser diode
İ		and a photo diode module are electrically
		connected to a first edge of the circuit board.
C10	USP4,369,494	C10 through C15 do not disclose, at least, an
C10	USP4,380,360	optical module comprising a laser diode module to
C12	USP4,388,671	convert a laser diode electrical signal into a laser
C12	USP4,393,516	diode optical signal and transmit the laser diode
C13		optical signal, which is transmitted at a data
	USP4,398,073	transmission rate of 1000Mbits/s or more.
C15	USP4,398,780	
C16		C16 does not disclose, at least, an optical module
	USP4,399,563	comprising a single circuit board, on which a serial
		connector and a laser diode electrical signal
		converter are mounted and to which a laser diode
		and a photo diode module are electrically
		connected to a first edge of the circuit board.

Ref	Title	Distinction between reference(s) and claim(s)
D1		D1 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
	USP4,408,273	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000Mbits/s or more.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical
D3	USP4,427,879	module comprising a laser diode electrical signal
D4		converter to convert serial data, received from a
	USP4,430,699	mother board, into a laser diode electrical signal.
D5		D5 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	11004 424 527	diode electrical signal into a laser diode optical
	USP4,434,537	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000Mbits/s or more.
D6		D6 does not disclose, at least, an optical module
	HIGD4 427 100	comprising a laser diode electrical signal converter
ı	USP4,437,190	to convert serial data, received from a mother
į		board, into a laser diode electrical signal.
D7		D7 does not disclose, at least, an optical module
		comprising a single circuit board, on which a serial
	USP4,439,006	connector and a laser diode electrical signal
	0354,439,000	converter are mounted and to which a laser diode
		and a photo diode module are electrically
		connected to a first edge of the circuit board.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical
D9		module comprising a laser diode electrical signal
	USP4,449,244	converter to convert serial data, received from a
		mother board, into a laser diode electrical signal.
D10	USP4,449,784	D10 through D13 do not disclose, at least, an
D11	USP4,453,903	optical module comprising a laser diode module to
D12	USP4,459,658	convert a laser diode electrical signal into a laser
D13		diode optical signal and transmit the laser diode
	USP4,461,537	optical signal, which is transmitted at a data
<b>T</b>		transmission rate of 1000Mbits/s or more.
D14		D14 does not disclose, at least, an optical module
	USP4,470,154	comprising a laser diode electrical signal converter
		to convert serial data, received from a mother
<u></u>		board, into a laser diode electrical signal.
D15		D15 does not disclose, at least, an optical module
	USP4,486,059	comprising a laser diode module to convert a laser
	051 4,400,037	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal,

		which is transmitted at a data transmission rate of 1000Mbits/s or more.
D16	USP4,493,113	D16 doesnot disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
E1		El does not disclose, at least, an optical module
	USP4,501,021	comprising a laser diode electrical signal converter
		to convert serial data, received from a mother
		board, into a laser diode electrical signal.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical
E3	USP4,505,035	module comprising a laser diode module to convert
E4	USP4,506,937	a laser diode electrical signal into a laser diode
E5		optical signal and transmit the laser diode optical
	USP4,510,553	signal, which is transmitted at a data transmission
		rate of 1000Mbits/s or more.
E6		E6 does not disclose, at least, an optical module
		comprising a single circuit board, on which a serial
	USP4,511,207	connector and a laser diode electrical signal
	051 1,511,207	converter are mounted and to which a laser diode
		and a photo diode module are electrically
		connected to a first edge of the circuit board.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical
E8	USP4,516,204	module comprising a laser diode module to convert
E9	USP4,519,670	a laser diode electrical signal into a laser diode
E10	USP4,519,672	optical signal and transmit the laser diode optical
E11	USP4,519,673	signal, which is transmitted at a data transmission
E12	USP4,522,463	rate of 1000Mbits/s or more.
E13	USP4,526,438	
E14	USP4,526,986	
E15		E15 does not disclose, at least, an optical module
	USP4,527,286	comprising a laser diode electrical signal converter
	USP4,327,200	to convert serial data, received from a mother
		board, into a laser diode electrical signal.
E16		E16 does not disclose, at least, an optical module
	LISDA 520 266	comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
	USP4,529,266	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000Mbits/s or more.

_		
Ref	Title	Distinction between reference(s) and claim(s)

F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical
F2	USP4,531,810	module comprising a laser diode module to convert
F3	USP4,533,208	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
F4	USP4,533,209	F4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical
F6	USP45,34,617	module comprising a laser diode module to convert
F7	USP4,535,233	a laser diode electrical signal into a laser diode
F8	USP4,537,468	optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
F9	USP4,539,476	F9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical
F11	USP4,540,246	module comprising a laser diode module to convert
F12	USP4,541,036	a laser diode electrical signal into a laser diode
F13	USP4,541,685	optical signal and transmit the laser diode optical
F14	USP4,542,076	signal, which is transmitted at a data transmission
F15	USP4,544,231	rate of 1000Mbits/s or more.
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1		G1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser
	USP4,544,234	diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical
G3	USP4,545,077	module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected to a first edge of the circuit board.
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical
G5	USP4,545,643	module comprising a laser diode module to convert
G6	USP4,545,644	a laser diode electrical signal into a laser diode
G7	USP4,545,645	optical signal and transmit the laser diode optical

G8	USP4,548,465	signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
G9		G9 does not disclose, at least, an optical module
	USP4,548,466	comprising a laser diode electrical signal converter
		to convert serial data, received from a mother
		board, into a laser diode electrical signal.
G10		G10 does not disclose, at least, an optical module
1		comprising a laser diode module to convert a laser
	USP4,548,467	diode electrical signal into a laser diode optical
	051 4,540,407	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000Mbits/s or more.
G11		G11 does not disclose, at least, an optical module
	11904 540 782	comprising a laser diode electrical signal converter
	USP4,549,782	to convert serial data, received from a mother
		board, into a laser diode electrical signal.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an
G13	USP4,550,975	optical module comprising a laser diode module to
G14		convert a laser diode electrical signal into a laser
	110D4 552 011	diode optical signal and transmit the laser diode
	USP4,553,811	optical signal, which is transmitted at a data
		transmission rate of 1000Mbits/s or more.
G15		G15 does not disclose, at least, an optical module
	11004 552 012	comprising a laser diode electrical signal converter
	USP4,553,813	to convert serial data, received from a mother
Ē		board, into a laser diode electrical signal.
G16		G16 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	HCD4 552 014	diode electrical signal into a laser diode optical
	USP4,553,814	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical
H2	USP4,556,281	module comprising a laser diode module to convert
H3	USP4,556,282	a laser diode electrical signal into a laser diode
H4	USP4,557,551	optical signal and transmit the laser diode optical
H5	USP4,560,234	signal, which is transmitted at a data transmission
Н6	USP4,563,057	rate of 1000Mbits/s or more.
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module

		comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an
H13	USP4,588,256	optical module comprising a laser diode module to
H14	USP4,589,728	convert a laser diode electrical signal into a laser
H15	USP4,597,631	diode optical signal and transmit the laser diode
H16	USP4,614,836	optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module
I2		comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
	USP4,634,239	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000Mbits/s or more.
I3		I3 does not disclose, at least, an optical module
		comprising a single circuit board, on which a serial
	USP4,641,371	connector and a laser diode electrical signal
	331 1,0 12,0 1	converter are mounted and to which a laser diode
		and a photo diode module are electrically
		connected to a first edge of the circuit board.
<u>I4</u>	USP4,647,148	I4 through I16 do not disclose, at least, an optical
<u>I5</u>	USP4,652,976	module comprising a laser diode module to convert
I6	USP4,663,240	a laser diode electrical signal into a laser diode
I7	USP4,663,603	optical signal and transmit the laser diode optical
18	USP4,678,264	signal, which is transmitted at a data transmission
<u> 19</u>	USP4,679,883	rate of 1000Mbits/s or more.
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical
J2	USP4,762,388	module comprising a laser diode module to convert
J3	USP4,767,179	a laser diode electrical signal into a laser diode
J4	USP4,772,931	optical signal and transmit the laser diode optical
J5	USP4,779,952	signal, which is transmitted at a data transmission

J6	USP4,789,218	rate of 1000Mbits/s or more.
J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
K1		K1 does not disclose, at least, an optical module
	USP4,840,451	comprising a laser diode electrical signal converter
l.	0314,640,431	to convert serial data, received from a mother
		board, into a laser diode electrical signal.
K2		K2 does not disclose, at least, an optical module
ŀ		comprising a single circuit board, on which a serial
	USP4,844,581	connector and a laser diode electrical signal
	051 4,044,501	converter are mounted and to which a laser diode
İ		and a photo diode module are electrically
		connected to a first edge of the circuit board.
K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical
K4	USP4,847,771	module comprising a laser diode module to convert
K5	USP4,849,944	a laser diode electrical signal into a laser diode
K6	USP4,857,002	optical signal and transmit the laser diode optical
K7	USP4,862,327	signal, which is transmitted at a data transmission
K8	USP4,872,212	rate of 1000Mbits/s or more.
K9	USP4,872,736	
K10		K10 does not disclose, at least, an optical module
	USP4,881,789	comprising a laser diode electrical signal converter
	031 4,861,769	to convert serial data, received from a mother
		board, into a laser diode electrical signal.
K11		K11 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	USP4,884,336	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000Mbits/s or more.
K12	USP4,897,711	K12 does not disclose, at least, an optical module
	001 7,077,711	comprising a laser diode electrical signal converter

		to convert serial data, received from a mother board, into a laser diode electrical signal.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an
K14	USP4,927,225	optical module comprising a laser diode module to
K15	USP4,944,568	convert a laser diode electrical signal into a laser
K16	USP4,945,448	diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical
L2	USP4,955,817	module comprising a laser diode module to convert
L3	USP4,963,104	a laser diode electrical signal into a laser diode
L4		optical signal and transmit the laser diode optical
	USP4,967,312	signal, which is transmitted at a data transmission
		rate of 1000Mbits/s or more.
L5		L5 does not disclose, at least, an optical module
	USP4,977,329	comprising a laser diode electrical signal converter
		to convert serial data, received from a mother
<u></u>		board, into a laser diode electrical signal.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical
L7		module comprising a laser diode module to convert
	**************************************	a laser diode electrical signal into a laser diode
	USP4,979,794	optical signal and transmit the laser diode optical
		signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
10	11004 006 625	
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical module comprising a laser diode electrical signal
L9	11004 000 024	converter to convert serial data, received from a
	USP4,989,934	mother board, into a laser diode electrical signal.
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical
L11	USP4,991,062	module comprising a laser diode module to convert
L12	USP5,002,495	a laser diode electrical signal into a laser diode
L13	USP5,004,434	optical signal and transmit the laser diode optical
L14	USP5,006,286	signal, which is transmitted at a data transmission
L15	USP5,011,425	rate of 1000Mbits/s or more.
L16	USP5,029,254	
LIT	001 0,040,404	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical
M2	USP5,035,641	module comprising a laser diode module to convert
M3	USP5,040,993	a laser diode electrical signal into a laser diode

M4		optical signal and transmit the laser diode optical
1014	HCD5 041 025	signal, which is transmitted at a data transmission
	USP5,041,025	rate of 1000Mbits/s or more.
M5		M5 does not disclose, at least, an optical module
	USP5,043,775	comprising a laser diode electrical signal converter
		to convert serial data, received from a mother
		board, into a laser diode electrical signal.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an
M7	USP5,045,635	optical module comprising a laser diode module to
M8	USP5,045,971	convert a laser diode electrical signal into a laser
M9	USP5,046,955	diode optical signal and transmit the laser diode
M10	USP5,060,373	optical signal, which is transmitted at a data
M11	USP5,071,219	transmission rate of 1000Mbits/s or more.
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15		M15 does not disclose, at least, an optical module
	LIGD5 094 903	comprising a laser diode electrical signal converter
	USP5,084,802	to convert serial data, received from a mother
1		board, into a laser diode electrical signal.
M16		M16 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	HGD5 006 400	diode electrical signal into a laser diode optical
	USP5,086,422	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000Mbits/s or more.
L		1000Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
N1		N1 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	USP5,091,991	diode electrical signal into a laser diode optical
	031 3,091,991	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000Mbits/s or more.
N2	,	N2 does not disclose, at least, an optical module
	USP5,093,879	comprising a laser diode electrical signal converter
		to convert serial data, received from a mother
		board, into a laser diode electrical signal.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical
N4	USP5,101,463	module comprising a laser diode module to convert
N5	USP5,104,243	a laser diode electrical signal into a laser diode
N6	USP5,107,404	optical signal and transmit the laser diode optical
N7	USP5,108,294	signal, which is transmitted at a data transmission
N8	USP5,109,453	rate of 1000Mbits/s or more.
N9	USP5,113,467	N9 does not disclose, at least, an optical module

		comprising a laser diode electrical signal converter
		to convert serial data, received from a mother
:		board, into a laser diode electrical signal.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an
N11	USP5,117,476	optical module comprising a laser diode module to
N12	USP5,118,362	convert a laser diode electrical signal into a laser
N13	USP5,118,904	diode optical signal and transmit the laser diode
N14	USP5,120,578	optical signal, which is transmitted at a data
	USF 3,120,378	transmission rate of 1000Mbits/s or more.
N15		N15 does not disclose, at least, an optical module
	USP5,122,893	comprising a laser diode electrical signal converter
	051 5,122,075	to convert serial data, received from a mother
		board, into a laser diode electrical signal.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical
N17		module comprising a laser diode module to convert
		a laser diode electrical signal into a laser diode
	USP5,125,849	optical signal and transmit the laser diode optical
		signal, which is transmitted at a data transmission
		rate of 1000Mbits/s or more.
N18		N18 does not disclose, at least, an optical module
	USP5,127,071	comprising a laser diode electrical signal converter
	051 5,127,071	to convert serial data, received from a mother
		board, into a laser diode electrical signal.
N19	USP5,132,871	N19 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O3 do not disclose, at least, an optical
O2	USP5,134,679	module comprising a laser diode module to convert
O3		a laser diode electrical signal into a laser diode
	LICDS 126 062	optical signal and transmit the laser diode optical
	USP5,136,063	signal, which is transmitted at a data transmission
		rate of 1000Mbits/s or more.
04	USP5,136,152	O4 and O5 do not disclose, at least, an optical
O5		module comprising a laser diode electrical signal
	USP5,136,603	converter to convert serial data, received from a
		mother board, into a laser diode electrical signal.
06	USP5,138,537	O6 through O8 do not disclose, at least, an optical
07	USP5,138,678	module comprising a laser diode module to convert

O8	USP5,140,663	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
09	USP5,155,786	O9 and O10 do not disclose, at least, an optical
O10	USP5,157,769	module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
O11	USP5,167,139	O11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
O12	USP5,168,537	O12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
013	USP5,170,146	O13 through O17 do not disclose, at least, an
O14	USP5,171,167	optical module comprising a laser diode module to
O15	USP5,173,059	convert a laser diode electrical signal into a laser
016	USP5,183,404	diode optical signal and transmit the laser diode
O17	USP5,183,405	optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical
P2	USP5,202,536	module comprising a laser diode module to convert
P3	USP5,207,597	a laser diode electrical signal into a laser diode
P4		optical signal and transmit the laser diode optical
	USP5,212,752	signal, which is transmitted at a data transmission
		rate of 1000Mbits/s or more.
P5		P5 does not disclose, at least, an optical module
1	USP5,212,754	comprising a laser diode electrical signal converter
		to convert serial data, received from a mother
		board, into a laser diode electrical signal.
P6_	USP5,218,519	P6 through P11 do not disclose, at least, an optical
P7	USP5,225,760	module comprising a laser diode module to convert
P8	USP5,233,676	a laser diode electrical signal into a laser diode
P9	USP5,233,674	optical signal and transmit the laser diode optical
P10	USP5,234,353	signal, which is transmitted at a data transmission
P11	USP5,238,426	rate of 1000Mbits/s or more.
P12		P12 does not disclose, at least, an optical module
	USP5,241,614	comprising a laser diode electrical signal converter
		to convert serial data, received from a mother

		board, into a laser diode electrical signal.
P13		P13 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal
	USP5,247,532	converter are mounted and to which a laser diode and a photo diode module are electrically connected to a first edge of the circuit board.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical
P15	USP5,259,054	module comprising a laser diode module to convert
P16	USP5,262,923	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
P17	USP5,271,079	P17 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
Q2	USP5,285,466	Q2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
Q3	USP5,285,511	Q3 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
Q4	USP5,285,512	Q4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an optical
Q6	USP5,286,247	module comprising a laser diode module to convert
Q7	USP5,288,247	a laser diode electrical signal into a laser diode
Q8	USP5,289,347	optical signal and transmit the laser diode optical
Q9	USP5,296,813	signal, which is transmitted at a data transmission
Q10	USP5,299,089	rate of 1000Mbits/s or more.

Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical
R2	USP5,333,221	module comprising a laser diode module to convert
R3		a laser diode electrical signal into a laser diode
	TIONS 222 225	optical signal and transmit the laser diode optical
	USP5,333,225	signal, which is transmitted at a data transmission
		rate of 1000Mbits/s or more.
R4		R4 does not disclose, at least, an optical module
	USP5,337,391	comprising a laser diode electrical signal converter
	001 3,337,331	to convert serial data, received from a mother
	1 - 4 (49)	board, into a laser diode electrical signal.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical
R6		module comprising a laser diode module to convert
		a laser diode electrical signal into a laser diode
	USP5,340,340	optical signal and transmit the laser diode optical
		signal, which is transmitted at a data transmission
D.5	11005 045 504	rate of 1000Mbits/s or more.
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical
R8	HIGDS 245 520	module comprising a laser diode electrical signal
	USP5,345,530	converter to convert serial data, received from a
R9		mother board, into a laser diode electrical signal.  R9 does not disclose, at least, an optical module
K9		comprising a single circuit board, on which a serial
		connector and a laser diode electrical signal
	USP5,353,364	converter are mounted and to which a laser diode
		and a photo diode module are electrically
		connected to a first edge of the circuit board.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an
R11	USP5,356,300	optical module comprising a laser diode module to
R12		convert a laser diode electrical signal into a laser
	HODE 257 400	diode optical signal and transmit the laser diode
	USP5,357,402	optical signal, which is transmitted at a data
		transmission rate of 1000Mbits/s or more.
R13		R13 does not disclose, at least, an optical module
	HIGDS 261 244	comprising a laser diode electrical signal converter
-	USP5,361,244	to convert serial data, received from a mother
		board, into a laser diode electrical signal.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an

R15	USP5,366,664	optical module comprising a laser diode module to
R16	USP5,372,515	diode optical signal and transmit the laser diode optical signal, which is transmitted at a data
		transmission rate of 1000Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical
S2	USP5,383,793	module comprising a laser diode module to convert
S3	USP5,388,995	a laser diode electrical signal into a laser diode
S4	USP5,390,268	optical signal and transmit the laser diode optical
S5	USP5,393,249	signal, which is transmitted at a data transmission
S6	USP5,397,242	rate of 1000Mbits/s or more.
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10		S10 does not disclose, at least, an optical module
	USP5,414,787	comprising a laser diode electrical signal converter
	03: 3,414,787	to convert serial data, received from a mother
		board, into a laser diode electrical signal.
S11		S11 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	USP5,416,668	diode electrical signal into a laser diode optical
	051 5,410,000	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
:		1000Mbits/s or more.
S12		S12 does not disclose, at least, an optical module
	11005 416 970	comprising a laser diode electrical signal converter
	USP5,416,870	to convert serial data, received from a mother
		board, into a laser diode electrical signal.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical
S14	USP5,419,717	module comprising a laser diode module to convert
S15	USP5,424,573	a laser diode electrical signal into a laser diode
S16		optical signal and transmit the laser diode optical
	USP5,428,703	signal, which is transmitted at a data transmission
		rate of 1000Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical

T3		module comprising a laser diode module to convert
13	USP5,443,390	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
T4	USP5,446,814	T4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T6	USP5,454,080	T6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
T7	USP5,455,703	T7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical
T9	USP5,469,332	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
T10	USP5,470,257	These references do not qualify as prior art.
T11	USP5,470,259	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T12	USP5,475,734	T12 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
T13	USP5,477,418	These references do not qualify as prior art.
T14	USP5,478,253	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical

T16		module comprising a laser diode module to convert a laser diode electrical signal into a laser diode
	USP5,478,260	optical signal and transmit the laser diode optical
		signal, which is transmitted at a data transmission
L		rate of 1000Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
U1		U1 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	USP5,481,634	diode electrical signal into a laser diode optical
	051 5,401,054	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000Mbits/s or more.
U2		U2 does not disclose, at least, an optical module
	USP5,482,658	comprising a laser diode electrical signal converter
	,	to convert serial data, received from a mother
U3	USP5,487,678	board, into a laser diode electrical signal.  U3 and U4 do not disclose, at least, an optical
U4	USF 3,467,078	module comprising a laser diode module to convert
04		a laser diode electrical signal into a laser diode
	USP5,491,613	optical signal and transmit the laser diode optical
	0013,171,013	signal, which is transmitted at a data transmission
		rate of 1000Mbits/s or more.
U5		This reference does not qualify as prior art.
	USP5,491,712	Applicants have claimed priority to Japanese
	USF 3,491,712	Application No. 06-086691, filed on April 25,
		1994, in Japan.
U6		U6 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	USP5,494,747	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of 1000Mbits/s or more.
U7		This reference does not qualify as prior art.
07		Applicants have claimed priority to Japanese
	USP5,499,311	Application No. 06-086691, filed on April 25,
		1994, in Japan.
U8		U8 does not disclose, at least, an optical module
	HSD5 400 212	comprising a laser diode electrical signal converter
	USP5,499,312	to convert serial data, received from a mother
		board, into a laser diode electrical signal.
U9		This reference does not qualify as prior art.
	USP5,504,657	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
L		1994, in Japan.

U10	USP5,506,921	U10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an
U12	USP5,507,668	optical module comprising a laser diode module to
U13	USP5,526,235	convert a laser diode electrical signal into a laser
U14	USP5,527,991	diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
U15	USP5,534,662	These references do not qualify as prior art.
U16	USP5,535,296	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
V1		V1 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	USP5,535,364	diode electrical signal into a laser diode optical
	051 3,333,301	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000Mbits/s or more.
V2	USP5,545,845	These references do not qualify as prior art.
V3	USP5,546,281	Applicants have claimed priority to Japanese
V4	USP5,547,385	Application No. 06-086691, filed on April 25,
		1994, in Japan.
V5		V5 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	USP5,548,641	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
***		1000Mbits/s or more.
V6		This reference does not qualify as prior art.
	USP5,548,677	Applicants have claimed priority to Japanese
	, ,	Application No. 06-086691, filed on April 25,
177	LIONS SSA 021	1994, in Japan.
V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical
V8	USP5,554,037	module comprising a laser diode module to convert
V9		a laser diode electrical signal into a laser diode
	USP5,567,167	optical signal and transmit the laser diode optical
		signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
7/10		<u> </u>
V10	LIGDS 577 064	V10 does not disclose, at least, an optical module
	USP5,577,064	comprising a laser diode electrical signal converter
		to convert serial data, received from a mother

		board, into a laser diode electrical signal.
V11		V11 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	USP5,580,269	diode electrical signal into a laser diode optical
	031 3,300,207	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000Mbits/s or more.
V12		This reference does not qualify as prior art.
	USP5,588,850	Applicants have claimed priority to Japanese
	USF 3,388,830	Application No. 06-086691, filed on April 25,
		1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical
V14		module comprising a laser diode module to convert
		a laser diode electrical signal into a laser diode
	USP5,599,595	optical signal and transmit the laser diode optical
		signal, which is transmitted at a data transmission
		rate of 1000Mbits/s or more.
V15	USP5,600,470	V15 does not disclose, at least, an optical module
		comprising a laser diode electrical signal converter
		to convert serial data, received from a mother
		board, into a laser diode electrical signal.
V16		This reference does not qualify as prior art.
	USP5,613,860	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art.
W2	USP5,631,998	Applicants have claimed priority to Japanese
W3	USP5,653,596	Application No. 06-086691, filed on April 25, 1994, in Japan.
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
W5	USP5,675,428	These references do not qualify as prior art.
W6	USP5,687,267	Applicants have claimed priority to Japanese
W7	USP5,717,533	Application No. 06-086691, filed on April 25,
W8	USP5,724,729	1994, in Japan.
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	

W13	USP5,767,999
W14	USP5,779,504
W15	USP5,797,771
W16	USP5,836,774

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art.
X2	USP5,879,173	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical
X4	EP 0 232792 A1	module comprising a laser diode module to convert
X5	EP.0 228 278	a laser diode electrical signal into a laser diode
X6		optical signal and transmit the laser diode optical
	EP.0 305112 A2	signal, which is transmitted at a data transmission
		rate of 1000Mbits/s or more.
_X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical
X8		module comprising a laser diode electrical signal
	EP.0 413 489 A2	converter to convert serial data, received from a
770		mother board, into a laser diode electrical signal.
X9		X9 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	EP.0 437 161 A2	diode electrical signal into a laser diode optical
ļ		signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of
		1000Mbits/s or more.
X10		X10 does not disclose, at least, an optical module
Alu		comprising a laser diode electrical signal converter
	EP.0 456 298 B1	to convert serial data, received from a mother
		board, into a laser diode electrical signal.
X11		X11 does not disclose, at least, an optical module
711		comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
	EP.0 530 791 A2	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000Mbits/s or more.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an
X13	EP.0 588 014 A2	optical module comprising a laser diode electrical
X14		signal converter to convert serial data, received
	EP.0 600 645 A1	from a mother board, into a laser diode electrical
		signal.
X15		X15 does not disclose, at least, an optical module
	EP.0 613 032 A2	comprising a single circuit board, on which a serial
		connector and a laser diode electrical signal
		converter are mounted and to which a laser diode

		and a photo diode module are electrically
		connected to a first edge of the circuit board.
V16	ED 0 (52 (06 A1	X16 through X18 do not disclose, at least, an
X16	EP.0 652 696 A1	
X17	EP.0 656 696 A1	optical module comprising a laser diode module to
X18		convert a laser diode electrical signal into a laser
	EP.0 662 259 B1	diode optical signal and transmit the laser diode
	EP.0 002 239 B1	optical signal, which is transmitted at a data
		transmission rate of 1000Mbits/s or more.
X19		X19 does not disclose, at least, an optical module
	ED 442 (00 A2	comprising a laser diode electrical signal converter
	EP.442 608 A2	to convert serial data, received from a mother
		board, into a laser diode electrical signal.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical
X21		module comprising a laser diode module to convert
	JP.1-237783	a laser diode electrical signal into a laser diode
		optical signal and transmit the laser diode optical
		signal, which is transmitted at a data transmission
		rate of 1000Mbits/s or more.

Y1JP.2-151084Y1 through Y4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.Y3JP.2-278212converter to convert serial data, received from a mother board, into a laser diode electrical signal.Y5JP.3-20458Y5 through Y7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.Y8JP.4-122905Y8 through Y10 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.Y10JP.4-211208Y11 through Y13 do not disclose, at least, an mother board, into a laser diode electrical signal.Y11JP.4-221207Y11 through Y13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.Y14Y14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.Y15JP.4-230305Y15 through Y18 do not disclose at least an least an optical module comprising a laser diode electrical signal.	Ref	Title	Distinction between reference(s) and claim(s)
Y3JP.2-278212converter to convert serial data, received from aY4JP.2-87837mother board, into a laser diode electrical signal.Y5JP.3-20458Y5 through Y7 do not disclose, at least, an opticalY6JP.3-94869module comprising a laser diode module to convertY7a laser diode electrical signal into a laser diodeJP.4-109593optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.Y8JP.4-122905Y8 through Y10 do not disclose, at least, an optical module comprising a laser diode electrical signalY10JP.4-211208converter to convert serial data, received from a mother board, into a laser diode electrical signal.Y11JP.4-221207Y11 through Y13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.Y14Y14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.	Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical
Y4JP.2-87837mother board, into a laser diode electrical signal.Y5JP.3-20458Y5 through Y7 do not disclose, at least, an opticalY6JP.3-94869module comprising a laser diode module to convertY7a laser diode electrical signal into a laser diodeJP.4-109593optical signal and transmit the laser diode opticalsignal, which is transmitted at a data transmissionY8JP.4-122905Y8 through Y10 do not disclose, at least, an opticalY9JP.4-165312module comprising a laser diode electrical signalY10JP.4-211208converter to convert serial data, received from aY11JP.4-221207Y11 through Y13 do not disclose, at least, anY12JP.4-229962optical module comprising a laser diode module toY13convert a laser diode electrical signal into a laserJP.4-230978diode optical signal and transmit the laser diodeJP.4-234715Y14 does not disclose, at least, an optical moduleY14 does not disclose, at least, an optical modulecomprising a laser diode electrical signal converterto convert serial data, received from a motherboard, into a laser diode electrical signal.	Y2	JP.2-181710	
Y5 JP.3-20458 Y6 JP.3-94869 T7 a laser diode electrical signal into a laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.  Y8 JP.4-122905 Y8 through Y10 do not disclose, at least, an optical module comprising a laser diode electrical signal and transmission rate of 1000Mbits/s or more.  Y8 JP.4-122905 Y8 through Y10 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.  Y11 JP.4-221207 Y11 through Y13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.  Y14 JP.4-234715  Y14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.	Y3	JP.2-278212	· ·
Y6JP.3-94869module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.Y8JP.4-122905Y8 through Y10 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.Y10JP.4-211208Y11 through Y13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.Y14Y14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.	Y4	JP.2-87837	mother board, into a laser diode electrical signal.
JP.4-109593  a laser diode electrical signal into a laser diode optical signal, which is transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.  Y8 JP.4-122905  Y8 through Y10 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.  Y11 JP.4-221207  Y12 JP.4-229962  Y13  JP.4-230978  JP.4-230978  JP.4-230978  JP.4-234715  a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.  Y14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.	Y5	JP.3-20458	
JP.4-109593  optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.  Y8 JP.4-122905  Y8 through Y10 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.  Y11 JP.4-221207  Y11 through Y13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.  Y14 JP.4-230978  JP.4-234715  JP.4-234715  JP.4-234715  optical signal and transmit the laser diode electrical signal into a laser diode electrical signal and transmit data a data transmission rate of 1000Mbits/s or more.  Y14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.	Y6	JP.3-94869	
Y8 JP.4-122905 Y9 JP.4-165312 module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal. Y11 JP.4-221207 Y12 JP.4-229962 Y13 JP.4-230978 JP.4-230978  Y14 Y14 does not disclose, at least, an optical module comprising a laser diode optical signal and transmitted at a data transmission rate of 1000Mbits/s or more. Y14 Y14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.	Y7	JP.4-109593	optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission
Y9 JP.4-165312 Y10 JP.4-211208  The proof of the proof of	770	TD 4 100005	
Y10 JP.4-211208 converter to convert serial data, received from a mother board, into a laser diode electrical signal.  Y11 JP.4-221207 Y11 through Y13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.  Y14 Y14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.			
Mother board, into a laser diode electrical signal.  Y11 JP.4-221207  Y11 through Y13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.  Y14  JP.4-234715  Mother board, into a laser diode electrical signal.  Y14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.		JP.4-165312	
Y12 JP.4-229962  P13 optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.  Y14 Y14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.	Y10	JP.4-211208	· · · · · · · · · · · · · · · · · · ·
Y13  JP.4-230978  convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.  Y14  JP.4-234715  Y14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.	Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an
JP.4-230978  diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.  Y14  JP.4-234715  JP.4-234715  diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.  Y14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.	Y12	JP.4-229962	
JP.4-234715 comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.	Y13	JP.4-230978	diode optical signal and transmit the laser diode optical signal, which is transmitted at a data
to convert serial data, received from a mother board, into a laser diode electrical signal.	Y14		
		JP.4-234715	to convert serial data, received from a mother
	Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an

Y16	JP.4-50901	optical module comprising a laser diode module to
Y17	JP.4-87809	convert a laser diode electrical signal into a laser
Y18		diode optical signal and transmit the laser diode
	JP.5-052802	optical signal, which is transmitted at a data
		transmission rate of 1000Mbits/s or more.
Y19		Y19 does not disclose, at least, an optical module
	ID 5 124147	comprising a laser diode electrical signal converter
	JP.5-134147	to convert serial data, received from a mother
		board, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical
Z2		module comprising a laser diode electrical signal
	JP.5-188250	converter to convert serial data, received from a
		mother board, into a laser diode electrical signal.
Z3		Z3 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	JP.5-211379	diode electrical signal into a laser diode optical
	31.3-211377	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000Mbits/s or more.
Z4		Z4 does not disclose, at least, an optical module
	JP.5-218581	comprising a laser diode electrical signal converter
		to convert serial data, received from a mother
		board, into a laser diode electrical signal.
<u>Z5</u>	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical
<u>Z6</u>	JP.5-70955	module comprising a laser diode module to convert
<u>Z7</u>	JP.61-158046	a laser diode electrical signal into a laser diode
Z8	TD 61 100005	optical signal and transmit the laser diode optical
	JP.61-188385	signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
<u>Z9</u>		Z9 does not disclose, at least, an optical module
Z9		comprising a single circuit board, on which a serial
		connector and a laser diode electrical signal
	JP.63-009325	converter are mounted and to which a laser diode
		and a photo diode module are electrically
		connected to a first edge of the circuit board.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an
Z11	JP.63-65967	optical module comprising a laser diode module to
Z12	JP.63-65978	convert a laser diode electrical signal into a laser
Z13	JP.63-82998	diode optical signal and transmit the laser diode
Z14	U-3-20458	optical signal, which is transmitted at a data
Z15	U-3-94869	transmission rate of 1000Mbits/s or more.
Z16	U-4-87809	
Z17	U-5-052802	

Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an
AA2	U-63-16496	optical module comprising a laser diode module to
AA3	U-63-65967	convert a laser diode electrical signal into a laser
AA4	U-63-65978	diode optical signal and transmit the laser diode
AA5	U-63-82998	optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
BB2	Ronald LSoderstrom et al., "An optical Date Link using a CD laser", SPIE Vol. 1577 High Speed Fiber Networks and Channels, pp. 163-173, 1991	BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode electrical
BB3	BCP,Inc."Gigabits Over Multimode Optical Fiber"no date	signal converter to convert serial data, received
BB4	Ronald L.Soderstrom et al., "CD laser optical Date Links for Workstation and Midrange Computers", IEEE p.505-509,1993.	from a mother board, into a laser diode electrical signal.
BB5	FDDI Low-Cost Fiber Phyiscal Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	BB5 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected to a first edge of the circuit board.
BB6	HP Module HFBR-5103, FDDI Data Sheet,http://www.hp.com/HP- COMP/fiber/hfbr5103.html,Jun.11,1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module to convert
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System".www.patents.ibm.com/tdbs/tdb?ℴ=93A +60964,April 1993	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
BB8	IBM, "A Proposal for a New High Performance "OptopElectronics Enterprise Oct.1992 ANSI Meeting,Oct.13,1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode electrical signal
BB9	IBM, et al,"GLM Family",FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	converter to convert serial data, received from a mother board, into a laser diode electrical signal.
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	BB10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal,

		which is transmitted at a data transmission rate of 1000Mbits/s or more.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver",Electronic Engineering Times,Aug.1993.	BB11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan
CC3	Siemens, "Who provides Low-Cost Transceivers for all Sandards?" no date.	CC3 through CC5 do not disclose, at least, an
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	optical module comprising a laser diode electrical signal converter to convert serial data, received
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	from a mother board, into a laser diode electrical signal.
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	CC7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	CC8 and CC9 do not disclose, at least, an optical module comprising a laser diode module to convert
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454.definition of LED, Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
CC11	Edward R.Salmon, Encapsulation of Electronic Devices and Components, Marcel Deckker Inc., New York, 1987	CC11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser

	diode electrical signal into a laser diode optical
1	signal and transmit the laser diode optical signal,
	which is transmitted at a data transmission rate of
	1000Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conducive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode module to
DD2	HEADS UpSumitomo Electric Lightwave joins Other in Announcement,May 11,1995	convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
DD4	Shortwave Opto Assembly, IBM OptoElectronic Enterprises, IBM/OEE Market Survey Only, Rev. 1, Jan. 6, 1993	DD4 and DD5 do not disclose, at least, an optical module comprising a laser diode electrical signal
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	converter to convert serial data, received from a mother board, into a laser diode electrical signal.
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.	DD6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
DD7	Ronald LSoderstrom et al., A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD) FOC/LAN 87&MFOC-WEST,pp.383-385,no date.	DD7 through DD9 do not disclose, at least, an optical module comprising a laser diode electrical
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
DD9	Ronald L.Soderstrom et al., Optical Components and Electronic Packaging for High Performance Optical Date Links, THE RESEARCH INVESTMENT, p. 19- 28 (no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected to a first edge of the circuit board.
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.

Dof	Title	Distinction between reference(s) and claim(s)
I/CI	litle	Distriction between reference(s) and claim(s)

EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute, 1996. Communications Standard Dictionary;	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode
EE2	p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	optical signal, which is transmitted at a data
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	transmission rate of 1000Mbits/s or more.
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer date links", Fiber Optic Datacom and Computer Networks, SPIE-The International Society for Optical Engineerdings, Vol. 1577, pp. 174-181, 1988	
EE5	David A.Knodel et al.,"Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34, No.7B, Dec. 1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge, IBM Technical Disclosure Bulletin, March 1987, https://www.delphion.com/tdb?o=87A%2060509, last visited Mar. 8, 2005.	
EE9	K.P.Jackson et al., "High-Density, Array, Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings, IEEE Computer Society Press.	
EE10	TDB:Stackable Circuit Card Packaging within a Logic Cage,IBM Technical Disclosure Bulletin,Dec.1992,https://www.delphion.com/tbds/tdb?o=92A%2063485,last visited Mar.8,2005	
EE11	Jeff Hechi, The Laser Guidebook, 2nd ed., McGraw Hill, Inc., 1992	

## Claim Chart for Claims 122-127 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
Al	Re.32,502	Al through Al6 do not disclose, at least, a module
A2	USP2,899,669	cap comprising a first elastic part to protect a laser
A3	USP3,264,601	diode module and a second elastic part to protect a
A4	USP3,332,860	photo diode module, such that foreign matter is
A5	USP3,474,380	prevented from invading into a first opening of the
A6	USP3,497,866	laser diode module and a second opening of the
A7	USP3,523,269	photo diode module when the module cap is
A8	USP3,670,290	removably attached to an optical module.
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	
A14	USP3,805,116	
A15	USP3,809,908	
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B16 do not disclose, at least, a module
B2	USP4,047,242	cap comprising a first elastic part to protect a laser
B3	USP4,156,903	diode module and a second elastic part to protect a
B4	USP4,161,650	photo diode module, such that foreign matter is
B5	USP4,167,303	prevented from invading into a first opening of the
B6	USP4,176,897	laser diode module and a second opening of the
B7	USP4,217,019	photo diode module when the module cap is
B8	USP4,217,488	removably attached to an optical module.
B9	USP4,226,491	
B10	USP4,234,968	
B11	USP4,249,266	
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	
B15	USP4,273,413	
B16	USP4,276,656	

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 through C16 do not disclose, at least, a module
C2	USP4,295,181	cap comprising a first elastic part to protect a laser
C3	USP4,301,543	diode module and a second elastic part to protect a
C4	USP4,330,870	photo diode module, such that foreign matter is

C5	USP4,345,808	prevented from invading into a first opening of the
C6	USP4,347,655	laser diode module and a second opening of the
C7	USP4,357,606	photo diode module when the module cap is
C8	USP4,360,248	removably attached to an optical module.
C9	USP4,366,565	
C10	USP4,369,494	
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 through D16 do not disclose, at least, a module
D2	USP4,422,088	cap comprising a first elastic part to protect a laser
D3	USP4,427,879	diode module and a second elastic part to protect a
D4	USP4,430,699	photo diode module, such that foreign matter is
D5	USP4,434,537	prevented from invading into a first opening of the
D6	USP4,437,190	laser diode module and a second opening of the
D7	USP4,439,006	photo diode module when the module cap is
D8	USP4,446,515	removably attached to an optical module.
D9	USP4,449,244	
D10	USP4,449,784	
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	
D15	USP4,486,059	
D16	USP4,493,113	

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 through E16 do not disclose, at least, a module
E2	USP4,502,130	cap comprising a first elastic part to protect a laser
E3	USP4,505,035	diode module and a second elastic part to protect a
E4	USP4,506,937	photo diode module, such that foreign matter is
E5	USP4,510,553	prevented from invading into a first opening of the
E6	USP4,511,207	laser diode module and a second opening of the
E7	USP4,514,586	photo diode module when the module cap is
E8	USP4,516,204	removably attached to an optical module.
E9	USP4,519,670	
E10	USP4,519,672	
E11	USP4,519,673	

E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	
E16	USP4,529,266	

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F16 do not disclose, at least, a module
F2	USP4,531,810	cap comprising a first elastic part to protect a laser
F3	USP4,533,208	diode module and a second elastic part to protect a
F4	USP4,533,209	photo diode module, such that foreign matter is
F5	USP4,534,616	prevented from invading into a first opening of the
F6	USP45,34,617	laser diode module and a second opening of the
F7	USP4,535,233	photo diode module when the module cap is
F8	USP4,537,468	removably attached to an optical module.
F9	USP4,539,476	
F10	USP4,540,237	
F11	USP4,540,246	
F12	USP4,541,036	
F13	USP4,541,685	
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 through G16 do not disclose, at least, a module
G2	USP4,545,074	cap comprising a first elastic part to protect a laser
G3	USP4,545,077	diode module and a second elastic part to protect a
G4	USP4,545,642	photo diode module, such that foreign matter is
G5	USP4,545,643	prevented from invading into a first opening of the
G6	USP4,545,644	laser diode module and a second opening of the
G7	USP4,545,645	photo diode module when the module cap is
G8	USP4,548,465	removably attached to an optical module.
G9	USP4,548,466	
G10	USP4,548,467	
G11	USP4,549,782	
G12	USP4,549,783	
G13	USP4,550,975	
G14		
	USP4,553,811	

G15	USP4,553,813	
G16	USP4,553,814	

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H16 do not disclose, at least, a module
H2	USP4,556,281	cap comprising a first elastic part to protect a laser
H3	USP4,556,282	diode module and a second elastic part to protect a
H4	USP4,557,551	photo diode module, such that foreign matter is
H5	USP4,560,234	prevented from invading into a first opening of the
Н6	USP4,563,057	laser diode module and a second opening of the
H7	USP4,566,753	photo diode module when the module cap is
H8	USP4,568,145	removably attached to an optical module.
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	
H12	USP4,580,872	
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 through I16 do not disclose, at least, a module
I2	USP4,634,239	cap comprising a first elastic part to protect a laser
13	USP4,641,371	diode module and a second elastic part to protect a
I4	USP4,647,148	photo diode module, such that foreign matter is
I5	USP4,652,976	prevented from invading into a first opening of the
<u>I6</u>	USP4,663,240	laser diode module and a second opening of the
I7	USP4,663,603	photo diode module when the module cap is
18	USP4,678,264	removably attached to an optical module.
I9	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J16 do not disclose, at least, a module
J2	USP4,762,388	cap comprising a first elastic part to protect a laser

J3	USP4,767,179	diode module and a second elastic part to protect a
J4	USP4,772,931	photo diode module, such that foreign matter is
J5	USP4,779,952	prevented from invading into a first opening of the
J6	USP4,789,218	laser diode module and a second opening of the
J7	USP4,798,430	photo diode module when the module cap is
J8	USP4,798,440	removably attached to an optical module.
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 through K16 do not disclose, at least, a module
K2	USP4,844,581	cap comprising a first elastic part to protect a laser
K3	USP4,847,711	diode module and a second elastic part to protect a
K4	USP4,847,771	photo diode module, such that foreign matter is
K5	USP4,849,944	prevented from invading into a first opening of the
K6	USP4,857,002	laser diode module and a second opening of the
K7	USP4,862,327	photo diode module when the module cap is
K8	USP4,872,212	removably attached to an optical module.
K9	USP4,872,736	
K10	USP4,881,789	
K11	USP4,884,336	
K12	USP4,897,711	
K13	USP4,906,197	
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L16 do not disclose, at least, a module
L2	USP4,955,817	cap comprising a first elastic part to protect a laser
L3	USP4,963,104	diode module and a second elastic part to protect a
L4	USP4,967,312	photo diode module, such that foreign matter is
L5	USP4,977,329	prevented from invading into a first opening of the
L6	USP4,979,793	laser diode module and a second opening of the
L7	USP4,979,794	photo diode module when the module cap is
L8	USP4,986,625	removably attached to an optical module.
L9	USP4,989,934	

L10	USP4,990,104	
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	
L14	USP5,006,286	
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M16 do not disclose, at least, a module
M2	USP5,035,641	cap comprising a first elastic part to protect a laser
M3	USP5,040,993	diode module and a second elastic part to protect a
M4	USP5,041,025	photo diode module, such that foreign matter is
M5	USP5,043,775	prevented from invading into a first opening of the
M6	USP5,044,982	laser diode module and a second opening of the
M7	USP5,045,635	photo diode module when the module cap is
M8	USP5,045,971	removably attached to an optical module.
M9_	USP5,046,955	
M10	USP5,060,373	·
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	
M16	USP5,086,422	

Ref	Title	Distinction between reference(s) and claim(s)
N1_	USP5,091,991	N1 through N19 do not disclose, at least, a module
N2	USP5,093,879	cap comprising a first elastic part to protect a laser
N3_	USP5,094,623	diode module and a second elastic part to protect a
N4	USP5,101,463	photo diode module, such that foreign matter is
N5	USP5,104,243	prevented from invading into a first opening of the
N6_	USP5,107,404	laser diode module and a second opening of the
N7	USP5,108,294	photo diode module when the module cap is
N8	USP5,109,453	removably attached to an optical module.
N9	USP5,113,467	
N10	USP5,116,239	
N11	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	
N16	USP5,124,885	

N17 L	JSP5,125,849	
N18 L	JSP5,127,071	
N19 L	USP5,132,871	

Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O17 do not disclose, at least, a module
O2	USP5,134,679	cap comprising a first elastic part to protect a laser
O3	USP5,136,063	diode module and a second elastic part to protect a
O4	USP5,136,152	photo diode module, such that foreign matter is
O5	USP5,136,603	prevented from invading into a first opening of the
06	USP5,138,537	laser diode module and a second opening of the
07	USP5,138,678	photo diode module when the module cap is
O8	USP5,140,663	removably attached to an optical module.
09	USP5,155,786	
O10	USP5,157,769	
011	USP5,167,139	
O12	USP5,168,537	
O13	USP5,170,146	
O14	USP5,171,167	
O15	USP5,173,059	
016	USP5,183,404	
017	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P17 do not disclose, at least, a module
P2	USP5,202,536	cap comprising a first elastic part to protect a laser
P3	USP5,207,597	diode module and a second elastic part to protect a
P4	USP5,212,752	photo diode module, such that foreign matter is
P5	USP5,212,754	prevented from invading into a first opening of the
P6	USP5,218,519	laser diode module and a second opening of the
P7	USP5,225,760	photo diode module when the module cap is
P8	USP5,233,676	removably attached to an optical module.
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	
P13	USP5,247,532	
P14	USP5,259,052	
P15	USP5,259,054	
P16	USP5,262,923	
P17	USP5,271,079	

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 through Q16 do not disclose, at least, a module
Q2	USP5,285,466	cap comprising a first elastic part to protect a laser
Q3	USP5,285,511	diode module and a second elastic part to protect a
Q4	USP5,285,512	photo diode module, such that foreign matter is
Q5	USP5,286,207	prevented from invading into a first opening of the
Q6	USP5,286,247	laser diode module and a second opening of the
Q7	USP5,288,247	photo diode module when the module cap is
Q8	USP5,289,347	removably attached to an optical module.
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R16 do not disclose, at least, a module
R2	USP5,333,221	cap comprising a first elastic part to protect a laser
R3	USP5,333,225	diode module and a second elastic part to protect a
R4	USP5,337,391	photo diode module, such that foreign matter is
R5	USP5,337,396	prevented from invading into a first opening of the
R6	USP5,340,340	laser diode module and a second opening of the
R7	USP5,345,524	photo diode module when the module cap is
R8	USP5,345,530	removably attached to an optical module.
R9	USP5,353,364	
R10	USP5,353,634	
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	
R14	USP5,361,318	
R15	USP5,366,664	
R16_	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S16 do not disclose, at least, a module
S2	USP5,383,793	cap comprising a first elastic part to protect a laser
S3	USP5,388,995	diode module and a second elastic part to protect a
S4	USP5,390,268	photo diode module, such that foreign matter is
S5	USP5,393,249	prevented from invading into a first opening of the
S6	USP5,397,242	laser diode module and a second opening of the

S7	USP5,398,154	photo diode module when the module cap is
S8	USP5,398,295	removably attached to an optical module.
S9	USP5,408,384	
S10	USP5,414,787	
S11	USP5,416,668	
S12	USP5,416,870	
S13	USP5,416,872	
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 through T4 do not disclose, at least, a module
T2	USP5,434,747	cap comprising a first elastic part to protect a laser
T3	USP5,443,390	diode module and a second elastic part to protect a
T4		photo diode module, such that foreign matter is
		prevented from invading into a first opening of the
	USP5,446,814	laser diode module and a second opening of the
		photo diode module when the module cap is
		removably attached to an optical module.
T5		This reference does not qualify as prior art.
	USP5,452,387	Applicants have claimed priority to Japanese
	031 3,432,367	Application No. 06-086691, filed on April 25,
		1994, in Japan.
T6	USP5,454,080	T6 through T9 do not disclose, at least, a module
T7	USP5,455,703	cap comprising a first elastic part to protect a laser
T8	USP5,463,532	diode module and a second elastic part to protect a
T9		photo diode module, such that foreign matter is
		prevented from invading into a first opening of the
	USP5,469,332	laser diode module and a second opening of the
		photo diode module when the module cap is
		removably attached to an optical module.
T10	USP5,470,257	These references do not qualify as prior art.
T11		Applicants have claimed priority to Japanese
	USP5,470,259	Application No. 06-086691, filed on April 25,
		1994, in Japan.
T12		T12 does not disclose, at least, a module cap
		comprising a first elastic part to protect a laser
		diode module and a second elastic part to protect a
	USP5,475,734	photo diode module, such that foreign matter is
		prevented from invading into a first opening of the
		laser diode module and a second opening of the
		photo diode module when the module cap is
	VIODE 455 410	removably attached to an optical module.
T13	USP5,477,418	These references do not qualify as prior art.

T14	USP5,478,253	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T15	USP5,478,259	T15 and T16 do not disclose, at least, a module cap
T16	USP5,478,260	comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.

Ref	Title	Distinction between reference(s) and claim(s)
Ul	USP5,481,634	U1 through U4 do not disclose, at least, a module
U2	USP5,482,658	cap comprising a first elastic part to protect a laser
U3	USP5,487,678	diode module and a second elastic part to protect a
U4		photo diode module, such that foreign matter is
		prevented from invading into a first opening of the
	USP5,491,613	laser diode module and a second opening of the
		photo diode module when the module cap is
		removably attached to an optical module.
U5		This reference does not qualify as prior art.
	USP5,491,712	Applicants have claimed priority to Japanese
	001 3, 13 1,7 12	Application No. 06-086691, filed on April 25,
		1994, in Japan.
U6		U6 does not disclose, at least, a module cap
		comprising a first elastic part to protect a laser
u		diode module and a second elastic part to protect a
	USP5,494,747	photo diode module, such that foreign matter is
		prevented from invading into a first opening of the
		laser diode module and a second opening of the photo diode module when the module cap is
		removably attached to an optical module.
U7		This reference does not qualify as prior art.
07		Applicants have claimed priority to Japanese
	USP5,499,311	Application No. 06-086691, filed on April 25,
		1994, in Japan.
U8		U8 does not disclose, at least, a module cap
		comprising a first elastic part to protect a laser
		diode module and a second elastic part to protect a
	HGD5 400 212	photo diode module, such that foreign matter is
	USP5,499,312	prevented from invading into a first opening of the
		laser diode module and a second opening of the
		photo diode module when the module cap is
		removably attached to an optical module.

U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 through U14 do not disclose, at least, a
U11	USP5,506,922	module cap comprising a first elastic part to protect
U12	USP5,507,668	a laser diode module and a second elastic part to
U13	USP5,526,235	protect a photo diode module, such that foreign
U14	USP5,527,991	matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
U15	USP5,534,662	These references do not qualify as prior art.
U16	USP5,535,296	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
V1		V1 does not disclose, at least, a module cap
		comprising a first elastic part to protect a laser
		diode module and a second elastic part to protect a
	USP5,535,364	photo diode module, such that foreign matter is
	031 3,333,304	prevented from invading into a first opening of the
		laser diode module and a second opening of the
		photo diode module when the module cap is
		removably attached to an optical module.
V2	USP5,545,845	These references do not qualify as prior art.
V3	USP5,546,281	Applicants have claimed priority to Japanese
V4	USP5,547,385	Application No. 06-086691, filed on April 25,
	——————————————————————————————————————	1994, in Japan.
V5		V5 does not disclose, at least, a module cap
		comprising a first elastic part to protect a laser
		diode module and a second elastic part to protect a
	USP5,548,641	photo diode module, such that foreign matter is
	051 3,3 10,0 11	prevented from invading into a first opening of the
		laser diode module and a second opening of the
		photo diode module when the module cap is
		removably attached to an optical module.
V6		This reference does not qualify as prior art.
	USP5,548,677	Applicants have claimed priority to Japanese
	051 5,540,077	Application No. 06-086691, filed on April 25,
		1994, in Japan.
V7	USP5,554,031	V7 through V11 do not disclose, at least, a module
V8	USP5,554,037	cap comprising a first elastic part to protect a laser

V9	USP5,567,167	diode module and a second elastic part to protect a
V10	USP5,577,064	photo diode module, such that foreign matter is
V11	USP5,580,269	prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 through V15 do not disclose, at least, a
V14	USP5,599,595	module cap comprising a first elastic part to protect
V15	USP5,600,470	a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art.
W2	USP5,631,998	Applicants have claimed priority to Japanese
W3	USP5,653,596	Application No. 06-086691, filed on April 25, 1994, in Japan.
W4	USP5,659,459	W4 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
W5	USP5,675,428	These references do not qualify as prior art.
W6	USP5,687,267	Applicants have claimed priority to Japanese
W7	USP5,717,533	Application No. 06-086691, filed on April 25,
W8	USP5,724,729	] 1994, in Japan.
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	

W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art.
X2	USP5,879,173	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.
X3	DE.4239124 A1	X3 through X21 do not disclose, at least, a module
X4	EP 0 232792 A1	cap comprising a first elastic part to protect a laser
X5	EP.0 228 278	diode module and a second elastic part to protect a
X6	EP.0 305112 A2	photo diode module, such that foreign matter is
X7	EP.0 314 651 A2	prevented from invading into a first opening of the
X8	EP.0 413 489 A2	laser diode module and a second opening of the
X9	EP.0 437 161 A2	photo diode module when the module cap is
X10	EP.0 456 298 B1	removably attached to an optical module.
X11	EP.0 530 791 A2	
X12	EP.0 535 473 A1	
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	
X16	EP.0 652 696 A1	
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	
X20	WO 94/12900	
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y19 do not disclose, at least, a module
Y2	JP.2-181710	cap comprising a first elastic part to protect a laser
Y3	JP.2-278212	diode module and a second elastic part to protect a
Y4	JP.2-87837	photo diode module, such that foreign matter is
Y5	JP.3-20458	prevented from invading into a first opening of the
Y6	JP.3-94869	laser diode module and a second opening of the
Y7	JP.4-109593	photo diode module when the module cap is
Y8	JP.4-122905	removably attached to an optical module.
Y9	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	
Y12	JP.4-229962	

Y13	JP.4-230978	
Y14	JP.4-234715	
Y15	JP.4-270305	
Y16	JP.4-50901	
Y17	JP.4-87809	
Y18	JP.5-052802	
Y19	JP.5-134147	

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 through Z19 do not disclose, at least, a module
Z2	JP.5-188250	cap comprising a first elastic part to protect a laser
<b>Z</b> 3	JP.5-211379	diode module and a second elastic part to protect a
Z4	JP.5-218581	photo diode module, such that foreign matter is
Z5	JP.5-290913	prevented from invading into a first opening of the
Z6	JP.5-70955	laser diode module and a second opening of the
<b>Z</b> 7	JP.61-158046	photo diode module when the module cap is
Z8	JP.61-188385	removably attached to an optical module.
<b>Z</b> 9	JP.63-009325	
Z10	JP.63-16496	
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, a
AA2	U-63-16496	module cap comprising a first elastic part to protect
AA3	U-63-65967	a laser diode module and a second elastic part to
AA4	U-63-65978	protect a photo diode module, such that foreign
AA5	U-63-82998	matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 through BB11 do not disclose, at least, a

BB2	Ronald LSoderstrom et al.,"An optical Date Link using a CD laser",SPIE Vol. 1577 High Speed Fiber
DDL	Networks and Channels,pp.163-173,1991
BB3	BCP,Inc."Gigabits Over Multimode Optical Fiber"no
DD3	date
	Ronald L.Soderstrom et al., "CD laser optical Date
BB4	Links for Workstation and Midrange
	Computers", IEEE p.505-509, 1993.
	FDDI Low-Cost Fiber Phyiscal Layer Medium
BB5	Dependent (LCF-PMD) Common Receiver
	Footprint,no date.
	HP Module HFBR-5103, FDDI Data
BB6	Sheet,http://www.hp.com/HP-
	COMP/fiber/hfbr5103.html,Jun.11,1998
	IBM Technical Disclosure Bulletin "Optical Link
BB7	Card Guide/Retention
DD/	System".www.patents.ibm.com/tdbs/tdb?ℴ=93A
	+60964,April 1993
	IBM, "A Proposal for a New High Performance
BB8	"OptopElectronics Enterprise Oct. 1992 ANSI
	Meeting,Oct.13,1992
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun,
DD9	GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.
BB10	Methode Electronics, Inc., "DM 1063-DBLM9
рріо	Copper Gigabit Link Module" data sheet.(no date)
BB11	"Raylan Joins Low-Wavelength Push -850 nm
DDII	Transceiver", Electronic Engineering Times, Aug. 1993.

module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Sandards?" no date.	CC3 through CC11 do not disclose, at least, a
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	module cap comprising a first elastic part to protect a laser diode module and a second elastic part to
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	protect a photo diode module, such that foreign
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	matter is prevented from invading into a first
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	opening of the laser diode module and a second opening of the photo diode module when the
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	module cap is removably attached to an optical module.
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454. definition of LED, Van Nostrand Reinhold Co.	

	Edward R.Salmon, Encapsulation of Electronic Devices and Components, Marcel Deckker Inc., New York, 1987	
--	--	--

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conducive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD11 do not disclose, at least, a module cap comprising a first elastic part to protect
DD2	HEADS UpSumitomo Electric Lightwave joins Other in Announcement, May 11,1995	a laser diode module and a second elastic part to
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	protect a photo diode module, such that foreign matter is prevented from invading into a first
DD4	Shortwave Opto Assembly, IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev.1, Jan.6, 1993	opening of the laser diode module and a second opening of the photo diode module when the
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	module cap is removably attached to an optical module.
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association, 1990.	
DD7	Ronald LSoderstrom et al., A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD) FOC/LAN 87&MFOC-WEST,pp.383-385,no date.	
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	
DD9	Ronald L.Soderstrom et al., Optical Components and Electronic Packaging for High Performance Optical Date Links, THE RESEARCH INVESTMENT, p. 19-28 (no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute, 1996.	EE1 through EE11 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber, Van Nostrand Reinhold Publishing, 1983	protect a photo diode module, such that foreign matter is prevented from invading into a first
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	opening of the laser diode module and a second opening of the photo diode module when the
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer date links", Fiber Optic Datacom and Computer Networks, SPIE-The International Society for Optical Engineerdings, Vol. 1577, pp. 174-181, 1988	module cap is removably attached to an optical module.
EE5	David A.Knodel et al.,"Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	

	UIDM Tachnical Disclasure Dullatin
	"IBM Technical Disclosure Bulletin,
EE6	Electrostatic Dissipative Enclosed
	Connector", Vol.34, No.7B, Dec.1991
	"High Reliability SW Laser For Optical Data Links",
EE7	LEOS '93 Conference Proceedings, IEEE Lasers and
	Electro-Optics Society 1993 Annual Meeting;
	Minimizing Electrostatic Discharge to a
EE8	Cartridge, IBM Technical Disclosure Bulletin, March
EEO	1987,https://www.delphion.com/tdb?o=87A%2060509
	,last visited Mar.8,2005.
	K.P.Jackson et al., "High-Density, Array, Optical
EE9	Interconnects for Multi-Chip Module Conference
LL	MCMC-92 Proceedings,IEEE Computer Society
	Press.
	TDB:Stackable Circuit Card Packaging
	within a Logic Cage, IBM Technical
EE10	Disclosure
EEIO	Bulletin,Dec.1992,https://www.delphion.co
	m/tbds/tdb?o=92A%2063485,last visited
	Mar.8,2005
EE11	Jeff Hechi, The Laser Guidebook, 2nd
EE11	ed.,McGraw Hill,Inc.,1992

## Claim Chart for Claims 128-138 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical
A2	USP2,899,669	module comprising a laser diode module including
A3	USP3,264,601	a laser diode, to convert a laser diode electrical
A4	USP3,332,860	signal into a laser diode optical signal, which
A5	USP3,474,380	adapted for transmission to an optical fiber the laser
A6	USP3,497,866	diode optical signal having a data transmission rate
A7	USP3,523,269	of 1000 Mbits/s or more.
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
A14	USP3,805,116	A14 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical
A16	USP3,976,877	module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical
B2	USP4,047,242	module comprising a laser diode module including
B3		a laser diode, to convert a laser diode electrical
		signal into a laser diode optical signal, which
	USP4,156,903	adapted for transmission to an optical fiber the laser
		diode optical signal having a data transmission rate
		of 1000 Mbits/s or more.
B4	,	B4 does not disclose, at least, an optical module
	USP4,161,650	comprising a laser diode driver to convert serial
		data received through a surface mount type
		connector to a laser diode electrical signal for a

		laser diode.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical
B6	USP4,176,897	module comprising a laser diode module including
B7		a laser diode, to convert a laser diode electrical
		signal into a laser diode optical signal, which
	USP4,217,019	adapted for transmission to an optical fiber the laser
		diode optical signal having a data transmission rate
		of 1000 Mbits/s or more.
B8		B8 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP4,217,488	data received through a surface mount type
		connector to a laser diode electrical signal for a
		laser diode.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical
B10		module comprising a laser diode module including
		a laser diode, to convert a laser diode electrical
	USP4,234,968	signal into a laser diode optical signal, which
	1	adapted for transmission to an optical fiber the laser
		diode optical signal having a data transmission rate
D11	HGD4 240 266	of 1000 Mbits/s or more.
B11	USP4,249,266	B11 through B13 do not disclose, at least, an
B12	USP4,252,402	optical module comprising a laser diode driver to convert serial data received through a surface
B13	11004 257 124	1
	USP4,257,124	mount type connector to a laser diode electrical signal for a laser diode.
B14	HCD4 269 756	B14 and B15 do not disclose, at least, an optical
B14	USP4,268,756	module comprising a laser diode module including
B13		a laser diode, to convert a laser diode electrical
		signal into a laser diode optical signal, which
ļ	USP4,273,413	adapted for transmission to an optical fiber the laser
		diode optical signal having a data transmission rate
		of 1000 Mbits/s or more.
B16		B16 does not disclose, at least, an optical module
1010	•	comprising a laser diode driver to convert serial
	USP4,276,656	data received through a surface mount type
	1,270,000	connector to a laser diode electrical signal for a
		laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
C2	USP4,295,181	C2 does not disclose, at least, an optical module

		comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical
C4	USP4,330,870	module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
C5	USP4,345,808	C5 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
C6	USP4,347,655	C6 does not disclose, at least, an optical module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
C7	USP4,357,606	C7 doesnot disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
C8	USP4,360,248	C8 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
C9	USP4,366,565	C9 does not disclose, at least, an optical module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
C10	USP4,369,494	C10 through C15 do not disclose, at least, an
C11	USP4,380,360	optical module comprising a laser diode module
C12	USP4,388,671	including a laser diode, to convert a laser diode
C13	USP4,393,516	electrical signal into a laser diode optical signal,
C14	USP4,398,073	which adapted for transmission to an optical fiber

C15	USP4,398,780	the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
C16	USP4,399,563	C16 does not disclose, at least, an optical module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.

Ref	Title	Distinction between reference(s) and claim(s)
D1	LISDA 409 272	D1 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for
	USP4,408,273	transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical
D3	USP4,427,879	module comprising a laser diode driver to convert
D4	USP4,430,699	serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
D5	USP4,434,537	D5 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
D6	USP4,437,190	D6 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
D7	USP4,439,006	D7 does not disclose, at least, an optical module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical
D9	USP4,449,244	module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
D10	USP4,449,784	D10 through D13 do not disclose, at least, an
D11	USP4,453,903	optical module comprising a laser diode module

D12	USP4,459,658	including a laser diode, to convert a laser diode
D13	USP4,461,537	electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
D14	USP4,470,154	D14 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
D15	USP4,486,059	D15 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
D16	USP4,493,113	D16 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a
		laser diode.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical
E3	USP4,505,035	module comprising a laser diode module including
E4	USP4,506,937	a laser diode, to convert a laser diode electrical
E5	USP4,510,553	signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
E6	USP4,511,207	E6 does not disclose, at least, an optical module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical
E8	USP4,516,204	module comprising a laser diode module including
E9	USP4,519,670	a laser diode, to convert a laser diode electrical
E10	USP4,519,672	signal into a laser diode optical signal, which

E11	USP4,519,673	adapted for transmission to an optical fiber the laser
E12	USP4,522,463	diode optical signal having a data transmission rate
E13	USP4,526,438	of 1000 Mbits/s or more.
E14	USP4,526,986	
E15	USP4,527,286	E15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
E16	USP4,529,266	E16 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical
F2	USP4,531,810	module comprising a laser diode module including
F3		a laser diode, to convert a laser diode electrical
	TYON 4 500 000	signal into a laser diode optical signal, which
	USP4,533,208	adapted for transmission to an optical fiber the laser
		diode optical signal having a data transmission rate of 1000 Mbits/s or more.
F4		F4 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP4,533,209	data received through a surface mount type
		connector to a laser diode electrical signal for a
		laser diode.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical
F6	USP45,34,617	module comprising a laser diode module including
F7	USP4,535,233	a laser diode, to convert a laser diode electrical
F8		signal into a laser diode optical signal, which
	USP4,537,468	adapted for transmission to an optical fiber the laser
	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	diode optical signal having a data transmission rate of 1000 Mbits/s or more.
F9		F9 does not disclose, at least, an optical module comprising a laser diode driver to convert serial
-	USP4,539,476	data received through a surface mount type
	031 4,337,470	connector to a laser diode electrical signal for a
		laser diode.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical
F11	USP4,540,246	module comprising a laser diode module including
F12	USP4,541,036	a laser diode, to convert a laser diode electrical

F13	USP4,541,685	signal into a laser diode optical signal, which
F14	USP4,542,076	adapted for transmission to an optical fiber the laser
F15	USP4,544,231	diode optical signal having a data transmission rate
F16	USP4,544,233	of 1000 Mbits/s or more.

Ref	Title_	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
G2	USP4,545,074	G2 and G3 does not disclose, at least, an optical
G3	USP4,545,077	module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical
G5	USP4,545,643	module comprising a laser diode module including
G6	USP4,545,644	a laser diode, to convert a laser diode electrical
G7	USP4,545,645	signal into a laser diode optical signal, which
G8	USP4,548,465	adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
G9	USP4,548,466	G9 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
G10	USP4,548,467	G10 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
G11	USP4,549,782	G11 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an
G13	USP4,550,975	optical module comprising a laser diode module

G14	USP4,553,811	including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
G15	USP4,553,813	G15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
G16	USP4,553,814	G16 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical
H2	USP4,556,281	module comprising a laser diode module including
H3	USP4,556,282	a laser diode, to convert a laser diode electrical
H4	USP4,557,551	signal into a laser diode optical signal, which
H5	USP4,560,234	adapted for transmission to an optical fiber the laser
Н6	USP4,563,057	diode optical signal having a data transmission rate
H7	USP4,566,753	of 1000 Mbits/s or more.
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an
H13	USP4,588,256	optical module comprising a laser diode module
H14	USP4,589,728	including a laser diode, to convert a laser diode
H15	USP4,597,631	electrical signal into a laser diode optical signal,
H16	USP4,614,836	which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module

I2	USP4,634,239	comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
I3	USP4,641,371	I3 does not disclose, at least, an optical module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
I4	USP4,647,148	I4 through I16 do not disclose, at least, an optical
15	USP4,652,976	module comprising a laser diode module including
<u>I6</u>	USP4,663,240	a laser diode, to convert a laser diode electrical
I7_	USP4,663,603	signal into a laser diode optical signal, which
18	USP4,678,264	adapted for transmission to an optical fiber the laser
<u> 19</u>	USP4,679,883	diode optical signal having a data transmission rate
I10	USP4,695,106	of 1000 Mbits/s or more.
I11	USP4,697,864	
I12	USP4,708,433	_
I13	USP4,715,675	_
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical
J2	USP4,762,388	module comprising a laser diode module including
J3	USP4,767,179	a laser diode, to convert a laser diode electrical
J4	USP4,772,931	signal into a laser diode optical signal, which
J5	USP4,779,952	adapted for transmission to an optical fiber the laser
J6	USP4,789,218	diode optical signal having a data transmission rate
J7	USP4,798,430	of 1000 Mbits/s or more.
Ј8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type

connector to a laser diode electrical signal for a
 laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
K1		K1 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP4,840,451	data received through a surface mount type
		connector to a laser diode electrical signal for a
		laser diode.
K2		K2 does not disclose, at least, an optical module
		comprising a sole circuit board to mount thereon a
	USP4,844,581	surface mount type connector, a laser diode driver,
		a laser diode module, a photo diode module and a
77.0	77074.047.744	semiconductor integrated circuit.
<u>K3</u>	USP4,847,711	K3 through K9 do not disclose, at least, an optical
K4	USP4,847,771	module comprising a laser diode module including
K5	USP4,849,944	a laser diode, to convert a laser diode electrical
<u>K6</u>	USP4,857,002	signal into a laser diode optical signal, which
K7	USP4,862,327	adapted for transmission to an optical fiber the laser
K8	USP4,872,212	diode optical signal having a data transmission rate of 1000 Mbits/s or more.
K9	USP4,872,736	
K10		K10 does not disclose, at least, an optical module
	HGD 4 001 700	comprising a laser diode driver to convert serial
	USP4,881,789	data received through a surface mount type
		connector to a laser diode electrical signal for a laser diode.
K11		K11 does not disclose, at least, an optical module
1211		comprising a laser diode module including a laser
		diode, to convert a laser diode electrical signal into
	USP4,884,336	a laser diode optical signal, which adapted for
		transmission to an optical fiber the laser diode
		optical signal having a data transmission rate of
		1000 Mbits/s or more.
K12		K12 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP4,897,711	data received through a surface mount type
		connector to a laser diode electrical signal for a
		laser diode.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an
K14	USP4,927,225	optical module comprising a laser diode module
K15	USP4,944,568	including a laser diode, to convert a laser diode
K16		electrical signal into a laser diode optical signal,
	USP4,945,448	which adapted for transmission to an optical fiber
		the laser diode optical signal having a data
		transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical
L2	USP4,955,817	module comprising a laser diode module including
L3	USP4,963,104	a laser diode, to convert a laser diode electrical
L4		signal into a laser diode optical signal, which
İ	USP4,967,312	adapted for transmission to an optical fiber the laser
	USP4,907,312	diode optical signal having a data transmission rate
		of 1000 Mbits/s or more.
L5		L5 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP4,977,329	data received through a surface mount type
		connector to a laser diode electrical signal for a
		laser diode.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical
L7		module comprising a laser diode module including
		a laser diode, to convert a laser diode electrical
	USP4,979,794	signal into a laser diode optical signal, which
	,,,,,,,,,,	adapted for transmission to an optical fiber the laser
		diode optical signal having a data transmission rate
	110D 1 00 C 00 5	of 1000 Mbits/s or more.
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical
L9		module comprising a laser diode driver to convert
	USP4,989,934	serial data received through a surface mount type
		connector to a laser diode electrical signal for a laser diode.
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical
L10	USP4,990,104 USP4,991,062	module comprising a laser diode module including
L12	USP5,002,495	a laser diode, to convert a laser diode electrical
L12	USP5,004,434	signal into a laser diode optical signal, which
L13	USP5,006,286	adapted for transmission to an optical fiber the laser
L14	USP5,011,425	diode optical signal having a data transmission rate
L15	· · · · · · · · · · · · · · · · · · ·	of 1000 Mbits/s or more.
L10	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical
M2	USP5,035,641	module comprising a laser diode module including
M3	USP5,040,993	a laser diode, to convert a laser diode electrical
M4	USP5,041,025	signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode driver to convert serial

		data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an
M7	USP5,045,635	optical module comprising a laser diode module
M8	USP5,045,971	including a laser diode, to convert a laser diode
M9	USP5,046,955	electrical signal into a laser diode optical signal,
M10	USP5,060,373	which adapted for transmission to an optical fiber
M11	USP5,071,219	the laser diode optical signal having a data
M12	USP5,076,656	transmission rate of 1000 Mbits/s or more.
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
N1		N1 does not disclose, at least, an optical module
		comprising a laser diode module including a laser
		diode, to convert a laser diode electrical signal into
	USP5,091,991	a laser diode optical signal, which adapted for
		transmission to an optical fiber the laser diode
		optical signal having a data transmission rate of
		1000 Mbits/s or more.
N2		N2 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP5,093,879	data received through a surface mount type
		connector to a laser diode electrical signal for a
		laser diode.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical
N4	USP5,101,463	module comprising a laser diode module including
N5	USP5,104,243	a laser diode, to convert a laser diode electrical
N6	USP5,107,404	signal into a laser diode optical signal, which
N7	USP5,108,294	adapted for transmission to an optical fiber the laser
N8	USP5,109,453	diode optical signal having a data transmission rate of 1000 Mbits/s or more.

N9		N9 does not disclose, at least, an optical module
117		comprising a laser diode driver to convert serial
	USP5,113,467	data received through a surface mount type
	051 5,115,407	connector to a laser diode electrical signal for a
		laser diode.
NIIO	HCD5 116 220	N10 through N14 do not disclose, at least, an
N10	USP5,116,239	optical module comprising a laser diode module
N11	USP5,117,476	including a laser diode, to convert a laser diode
N12	USP5,118,362	
N13	USP5,118,904	electrical signal into a laser diode optical signal,
N14		which adapted for transmission to an optical fiber
	USP5,120,578	the laser diode optical signal having a data
		transmission rate of 1000 Mbits/s or more.
N15		N15 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP5,122,893	data received through a surface mount type
		connector to a laser diode electrical signal for a
		laser diode.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical
N17		module comprising a laser diode module including
		a laser diode, to convert a laser diode electrical
	USP5,125,849	signal into a laser diode optical signal, which
	051 5,125,049	adapted for transmission to an optical fiber the laser
		diode optical signal having a data transmission rate
		of 1000 Mbits/s or more.
N18		N18 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP5,127,071	data received through a surface mount type
		connector to a laser diode electrical signal for a
		laser diode.
N19	USP5,132,871	N19 does not disclose, at least, an optical module
		comprising a laser diode module including a laser
		diode, to convert a laser diode electrical signal into
		a laser diode optical signal, which adapted for
		transmission to an optical fiber the laser diode
		optical signal having a data transmission rate of
		1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O3 do not disclose, at least, an optical
O2	USP5,134,679	module comprising a laser diode module including
O3	USP5,136,063	a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
04	USP5,136,152	O4 and O5 do not disclose, at least, an optical

O5	USP5,136,603	module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
06	USP5,138,537	O6 through O8 do not disclose, at least, an optical
07	USP5,138,678	module comprising a laser diode module including
O8	USP5,140,663	a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
09	USP5,155,786	O9 and O10 do not disclose, at least, an optical
O10	USP5,157,769	module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
011	USP5,167,139	O11 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
012	USP5,168,537	O12 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an
014	USP5,171,167	optical module comprising a laser diode module
O15	USP5,173,059	including a laser diode, to convert a laser diode
O16	USP5,183,404	electrical signal into a laser diode optical signal,
O17	USP5,183,405	which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical
P2	USP5,202,536	module comprising a laser diode module including
P3	USP5,207,597	a laser diode, to convert a laser diode electrical
P4	USP5,212,752	signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
P5	USP5,212,754	P5 does not disclose, at least, an optical module

		comprising a laser diode driver to convert serial
		data received through a surface mount type
		connector to a laser diode electrical signal for a
		laser diode.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical
P7	USP5,225,760	module comprising a laser diode module including
P8	USP5,233,676	a laser diode, to convert a laser diode electrical
P9	USP5,233,674	signal into a laser diode optical signal, which
P10	USP5,234,353	adapted for transmission to an optical fiber the laser
P11	USP5,238,426	diode optical signal having a data transmission rate of 1000 Mbits/s or more.
P12		P12 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP5,241,614	data received through a surface mount type
		connector to a laser diode electrical signal for a
		laser diode.
P13		P13 does not disclose, at least, an optical module
		comprising a sole circuit board to mount thereon a
	USP5,247,532	surface mount type connector, a laser diode driver,
		a laser diode module, a photo diode module and a
		semiconductor integrated circuit.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical
P15	USP5,259,054	module comprising a laser diode module including
P16		a laser diode, to convert a laser diode electrical
		signal into a laser diode optical signal, which
	USP5,262,923	adapted for transmission to an optical fiber the laser
	·	diode optical signal having a data transmission rate
		of 1000 Mbits/s or more.
P17		P17 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP5,271,079	data received through a surface mount type
		connector to a laser diode electrical signal for a
		laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
Q2	USP5,285,466	Q2 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type

		connector to a laser diode electrical signal for a
		laser diode.
Q3		Q3 does not disclose, at least, an optical module
		comprising a laser diode module including a laser
		diode, to convert a laser diode electrical signal into
	USP5,285,511	a laser diode optical signal, which adapted for
		transmission to an optical fiber the laser diode
		optical signal having a data transmission rate of
	·	1000 Mbits/s or more.
Q4		Q4 does not disclose, at least, an optical module
`		comprising a laser diode driver to convert serial
	USP5,285,512	data received through a surface mount type
	, ,	connector to a laser diode electrical signal for a
		laser diode.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an optical
Q6	USP5,286,247	module comprising a laser diode module including
Q7	USP5,288,247	a laser diode, to convert a laser diode electrical
Q8	USP5,289,347	signal into a laser diode optical signal, which
Q9	USP5,296,813	adapted for transmission to an optical fiber the laser
Q10	USP5,299,089	diode optical signal having a data transmission rate
Q11	USP5,304,069	of 1000 Mbits/s or more.
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical
R2	USP5,333,221	module comprising a laser diode module including
R3		a laser diode, to convert a laser diode electrical
		signal into a laser diode optical signal, which
	USP5,333,225	adapted for transmission to an optical fiber the
		laser diode optical signal having a data
		transmission rate of 1000 Mbits/s or more.
R4		R4 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP5,337,391	data received through a surface mount type
		connector to a laser diode electrical signal for a
		laser diode.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical

R6		module comprising a laser diode module including
		a laser diode, to convert a laser diode electrical
ŀ	USP5,340,340	signal into a laser diode optical signal, which
ł	031 3,340,340	adapted for transmission to an optical fiber the
		laser diode optical signal having a data
		transmission rate of 1000 Mbits/s or more.
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical
R8		module comprising a laser diode driver to convert
	LICDS 245 520	serial data received through a surface mount type
	USP5,345,530	connector to a laser diode electrical signal for a
		laser diode.
R9		R9 does not disclose, at least, an optical module
		comprising a sole circuit board to mount thereon a
	USP5,353,364	surface mount type connector, a laser diode driver,
		a laser diode module, a photo diode module and a
		semiconductor integrated circuit.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an
R11	USP5,356,300	optical module comprising a laser diode module
R12		including a laser diode, to convert a laser diode
		electrical signal into a laser diode optical signal,
	USP5,357,402	which adapted for transmission to an optical fiber
		the laser diode optical signal having a data
		transmission rate of 1000 Mbits/s or more.
R13		R13 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	USP5,361,244	data received through a surface mount type
		connector to a laser diode electrical signal for a
		laser diode.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an
R15	USP5,366,664	optical module comprising a laser diode module
R16		including a laser diode, to convert a laser diode
		electrical signal into a laser diode optical signal,
	USP5,372,515	which adapted for transmission to an optical fiber
		the laser diode optical signal having a data
		transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical
S2	USP5,383,793	module comprising a laser diode module including
<b>S</b> 3	USP5,388,995	a laser diode, to convert a laser diode electrical
S4	USP5,390,268	signal into a laser diode optical signal, which
S5	USP5,393,249	adapted for transmission to an optical fiber the
S6	USP5,397,242	laser diode optical signal having a data
S7	USP5,398,154	transmission rate of 1000 Mbits/s or more.
S8	USP5,398,295	

<b>S9</b>	USP5,408,384	
S10	USP5,414,787	S10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
S11	USP5,416,668	S11 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical
S14	USP5,419,717	module comprising a laser diode module including
S15	USP5,424,573	a laser diode, to convert a laser diode electrical
S16	USP5,428,703	signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical
Т3	USP5,443,390	module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
T4	USP5,446,814	T4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
T5	USP5,452,387	This reference does not qualify as prior art.

		Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25,
		Application No. 00-080091, filed on April 23, 1994, in Japan.
Т6	USP5,454,080	T6 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
Т7	USP5,455,703	T7 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical
Т9	USP5,469,332	module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
T10	USP5,470,257	These references do not qualify as prior art.
T11	USP5,470,259	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T12	USP5,475,734	T12 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
T13	USP5,477,418	These references do not qualify as prior art.
T14	USP5,478,253	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical
T16	USP5,478,260	module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
U2	USP5,482,658	<u>U2 does</u> not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical
U4	USP5,491,613	module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial

		data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an
U12	USP5,507,668	optical module comprising a laser diode module
U13	USP5,526,235	including a laser diode, to convert a laser diode
U14	USP5,527,991	electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
U15	USP5,534,662	These references do not qualify as prior art.
U16	USP5,535,296	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
V2	USP5,545,845	These references do not qualify as prior art.
V3	USP5,546,281	Applicants have claimed priority to Japanese
V4	USP5,547,385	Application No. 06-086691, filed on April 25, 1994, in Japan.
V5	USP5,548,641	V5 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical
V8	USP5,554,037	module comprising a laser diode module including
V9	USP5,567,167	a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.

V10	USP5,577,064	V10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
V11	USP5,580,269	V11 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical
V14	USP5,599,595	module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art.
W2	USP5,631,998	Applicants have claimed priority to Japanese
W3	USP5,653,596	Application No. 06-086691, filed on April 25,
		1994, in Japan.
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.

W5	USP5,675,428	These references do not qualify as prior art.
W6	USP5,687,267	Applicants have claimed priority to Japanese
W7	USP5,717,533	Application No. 06-086691, filed on April 25,
W8	USP5,724,729	1994, in Japan.
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art.
X2	USP5,879,173	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical
X4	EP 0 232792 A1	module comprising a laser diode module including
X5	EP.0 228 278	a laser diode, to convert a laser diode electrical
X6		signal into a laser diode optical signal, which
	EP.0 305112 A2	adapted for transmission to an optical fiber the
	Br.0 303112 112	laser diode optical signal having a data
		transmission rate of 1000 Mbits/s or more.
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical
X8		module comprising a laser diode driver to convert
	EP.0 413 489 A2	serial data received through a surface mount type
	E1.0413403A2	connector to a laser diode electrical signal for a
		laser diode.
X9		X9 does not disclose, at least, an optical module
		comprising a laser diode module including a laser
	DD 0 405 461 40	diode, to convert a laser diode electrical signal into
	EP.0 437 161 A2	a laser diode optical signal, which adapted for
		transmission to an optical fiber the laser diode
		optical signal having a data transmission rate of
3710		1000 Mbits/s or more.
X10		X10 does not disclose, at least, an optical module
	EP.0 456 298 B1	comprising a laser diode driver to convert serial
		data received through a surface mount type
		connector to a laser diode electrical signal for a laser diode.
V11		X11 does not disclose, at least, an optical module
X11	ED 0 520 701 A2	comprising a laser diode module including a laser
	EP.0 530 791 A2	diode, to convert a laser diode electrical signal into
L		diode, to convert a faser diode electrical signal into

		a laser diode optical signal, which adapted for
		transmission to an optical fiber the laser diode
		optical signal having a data transmission rate of
		1000 Mbits/s or more.
7/10	ED 0 525 472 A1	
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an
X13	EP.0 588 014 A2	optical module comprising a laser diode driver to
X14	77 0 600 645 44	convert serial data received through a surface
	EP.0 600 645 A1	mount type connector to a laser diode electrical
		signal for a laser diode.
X15		X15 does not disclose, at least, an optical module
		comprising a sole circuit board to mount thereon a
	EP.0 613 032 A2	surface mount type connector, a laser diode driver,
İ		a laser diode module, a photo diode module and a
		semiconductor integrated circuit.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an
X17	EP.0 656 696 A1	optical module comprising a laser diode module
X18		including a laser diode, to convert a laser diode
		electrical signal into a laser diode optical signal,
	EP.0 662 259 B1	which adapted for transmission to an optical fiber
		the laser diode optical signal having a data
		transmission rate of 1000 Mbits/s or more.
X19		X19 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	EP.442 608 A2	data received through a surface mount type
		connector to a laser diode electrical signal for a
		laser diode.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical
X21		module comprising a laser diode module including
		a laser diode, to convert a laser diode electrical
	JP.1-237783	signal into a laser diode optical signal, which
		adapted for transmission to an optical fiber the
		laser diode optical signal having a data
		transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical
Y2	JP.2-181710	module comprising a laser diode driver to convert
Y3	JP.2-278212	serial data received through a surface mount type
Y4	JP.2-87837	connector to a laser diode electrical signal for a laser diode.
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical
Y6	JP.3-94869	module comprising a laser diode module including

<u>Y7</u>		a laser diode, to convert a laser diode electrical
Y /		
	ID 4 100503	signal into a laser diode optical signal, which
i	JP.4-109593	adapted for transmission to an optical fiber the
		laser diode optical signal having a data
		transmission rate of 1000 Mbits/s or more.
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical
Y9	JP.4-165312	module comprising a laser diode driver to convert
Y10		serial data received through a surface mount type
	JP.4-211208	connector to a laser diode electrical signal for a
		laser diode.
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an
Y12	JP.4-229962	optical module comprising a laser diode module
Y13		including a laser diode, to convert a laser diode
		electrical signal into a laser diode optical signal,
	JP.4-230978	which adapted for transmission to an optical fiber
		the laser diode optical signal having a data
		transmission rate of 1000 Mbits/s or more.
Y14		Y14 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	JP.4-234715	data received through a surface mount type
1		connector to a laser diode electrical signal for a
}		laser diode.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an
Y16	JP.4-50901	optical module comprising a laser diode module
Y17	JP.4-87809	including a laser diode, to convert a laser diode
Y18		electrical signal into a laser diode optical signal,
		which adapted for transmission to an optical fiber
	JP.5-052802	the laser diode optical signal having a data
		transmission rate of 1000 Mbits/s or more.
Y19		Y19 does not disclose, at least, an optical module
		comprising a laser diode driver to convert serial
	JP.5-134147	data received through a surface mount type
		connector to a laser diode electrical signal for a
		laser diode.
	<u> </u>	1

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical
Z2	JP.5-188250	module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
Z3	JP.5-211379	Z3 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for

		transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
Z4	JP.5-218581	Z4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
<b>Z</b> 5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical
Z6	JP.5-70955	module comprising a laser diode module including
_Z7	JP.61-158046	a laser diode, to convert a laser diode electrical
Z8	JP.61-188385	signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
Z9	JP.63-009325	Z9 does not disclose, at least, an optical module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an
Z11	JP.63-65967	optical module comprising a laser diode module
Z12	JP.63-65978	including a laser diode, to convert a laser diode
Z13	JP.63-82998	electrical signal into a laser diode optical signal,
Z14	U-3-20458	which adapted for transmission to an optical fiber
Z15	U-3-94869	the laser diode optical signal having a data
Z16	U-4-87809	transmission rate of 1000 Mbits/s or more.
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an
AA2	U-63-16496	optical module comprising a laser diode module
AA3	U-63-65967	including a laser diode, to convert a laser diode
AA4	U-63-65978	electrical signal into a laser diode optical signal,
AA5	U-63-82998	which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for

BB2 BB3 BB4	Ronald LSoderstrom et al.,"An optical Date Link using a CD laser", SPIE Vol. 1577 High Speed Fiber Networks and Channels,pp. 163-173,1991 BCP,Inc. "Gigabits Over Multimode Optical Fiber"no date Ronald L.Soderstrom et al., "CD laser optical Date Links for Workstation and Midrange Computers", IEEE p. 505-509,1993.	transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.  BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
BB5	FDDI Low-Cost Fiber Phyiscal Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	BB5 does not disclose, at least, an optical module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
BB6	HP Module HFBR-5103, FDDI Data Sheet,http://www.hp.com/HP- COMP/fiber/hfbr5103.html,Jun.11,1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module including
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System".www.patents.ibm.com/tdbs/tdb?ℴ=93A +60964,April 1993	a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
BB8	IBM, "A Proposal for a New High Performance "OptopElectronics Enterprise Oct.1992 ANSI Meeting,Oct.13,1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode driver to convert
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	BB10 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	BB11 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
CCI	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode

		optical signal having a data transmission rate of
		1000 Mbits/s or more.
		This reference does not qualify as prior art.
CC2	Sun Microsystems computer Co. et al., Gigabit	Applicants have claimed priority to Japanese
	Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	Application No. 06-086691, filed on April 25,
		1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Sandards?" no date.	CC3 through CC5 do not disclose, at least, an
CC4	AMP "PC Board Connectors", Product Guide 82759,	optical module comprising a laser diode driver to
	pp. 7104-7108, Catalog E2750 issued Jun. 1991	convert serial data received through a surface
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex	mount type connector to a laser diode electrical
	Transceiver" Catalog 65922,Dec.1993.	signal for a laser diode.
		CC6 does not disclose, at least, an optical module
		comprising a laser diode module including a laser
	AMBUENOI Engineering Name and 7 No. 6 and 24	diode, to convert a laser diode electrical signal into
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	a laser diode optical signal, which adapted for
		transmission to an optical fiber the laser diode
		optical signal having a data transmission rate of
		1000 Mbits/s or more.
		CC7 does not disclose, at least, an optical module
	Baldwin and Kellerman, "Fiber Optic Module	comprising a laser diode driver to convert serial
CC7	Interface Attachment" Research disclosure, Kenneth	data received through a surface mount type
	Mason Publications Ltd., England, Apr. 1991.	connector to a laser diode electrical signal for a
		laser diode.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason	CC8 and CC9 do not disclose, at least, an optical
	Publications Ltd., England, Apr. 1993.	module comprising a laser diode module including
		a laser diode, to convert a laser diode electrical
	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	signal into a laser diode optical signal, which
CC9		adapted for transmission to an optical fiber the laser
		diode optical signal having a data transmission rate
		of 1000 Mbits/s or more.
		CC10 does not disclose, at least, an optical module
	Martin H. Weik,"Communication Standard Dictionary"p.454.definition of LED,Van Nostrand	comprising a laser diode driver to convert serial
CC10		data received through a surface mount type
	Reinhold Co.	connector to a laser diode electrical signal for a
		laser diode.
		CC11 does not disclose, at least, an optical module
	Edward R.Salmon, Encapsulation of Electronic Devices and Components, Marcel Deckker Inc., New York, 1987	comprising a laser diode module including a laser
1		diode, to convert a laser diode electrical signal into
CC11		a laser diode optical signal, which adapted for
		transmission to an optical fiber the laser diode
		optical signal having a data transmission rate of
		1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)

	Dieter Gwinner, Conducive Coatings: Vacuum	DD1 through DD3 do not disclose, at least, an
DD1	Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	optical module comprising a laser diode module
DD2	HEADS UpSumitomo Electric Lightwave joins	including a laser diode, to convert a laser diode
DDZ	Other in Announcement, May 11,1995	electrical signal into a laser diode optical signal,
	Robert C. Herron, High Density Input/Output	which adapted for transmission to an optical fiber
DD3	Connector Systems,3M Electronic Products	the laser diode optical signal having a data
	Divisions,1990	transmission rate of 1000 Mbits/s or more.
	Shortwave Opto Assembly, IBM OptoElectronic	DD4 and DD5 do not disclose, at least, an optical
DD4	Enterprises; IBM/OEE Market Survey Only,	· · · · ·
	Rev.1,Jan.6,1993	module comprising a laser diode driver to convert
225	"Minimizing Electrostatic Discharge Damage to a	serial data received through a surface mount type
DD5	Cartridge", IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar., 1987	connector to a laser diode electrical signal for a
		laser diode.
		DD6 does not disclose, at least, an optical module
		comprising a laser diode module including a laser
	Japanese Standards Association " F04 Type	diode, to convert a laser diode electrical signal into
DD6	Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association, 1990.	a laser diode optical signal, which adapted for
1	3973 Japanese Standards Association, 1990.	transmission to an optical fiber the laser diode
		optical signal having a data transmission rate of
		1000 Mbits/s or more.
DD7	Ronald LSoderstrom et al., A Miniaturized Fiber Optic	DD7 through DD9 do not disclose, at least, an
ועע	Laser Receptacle Using a Compact Disk(CD)··· FOC/LAN' 87&MFOC-WEST,pp.383-385,no date.	optical module comprising a laser diode driver to
	"Transceiver Module Assembly", IBM Technical	convert serial data received through a surface
DD8	Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb	mount type connector to a laser diode electrical
	?o=79A+06370,last visited Mar.3,2005.	signal for a laser diode.
	Ronald L.Soderstrom et al., Optical Components and Electronic Packaging for High Performance Optical	
DD9	Date Links, THE RESEARCH INVESTMENT, p. 19-	
	28(no date).	DD10.1 (1) 1 (1) (1)
	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module
		comprising a sole circuit board to mount thereon a
DD10		surface mount type connector, a laser diode driver,
		a laser diode module, a photo diode module and a
		semiconductor integrated circuit.
		DD11 does not disclose, at least, an optical module
	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	comprising a laser diode module including a laser
		diode, to convert a laser diode electrical signal into
DD11		a laser diode optical signal, which adapted for
		transmission to an optical fiber the laser diode
		optical signal having a data transmission rate of
		1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute,1996.	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber, Van Nostrand Reinhold Publishing, 1983	electrical signal into a laser diode optical signal,

EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	which adapted for transmission to an optical fiber the laser diode optical signal having a data
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer date links", Fiber Optic Datacom and Computer Networks, SPIE-The International Society for Optical Engineerdings, Vol. 1577, pp. 174-181, 1988	transmission rate of 1000 Mbits/s or more.
	David A.Knodel et al.,"Open Fibre Control,a laser safety interlock	
EE5	technique", High-Speed Fiber Networks and Channels, SPIE-The International Society for Optical Engineering Proceedings, Vol. 991, pp. 179-182, 1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34, No.7B, Dec. 1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge, IBM Technical Disclosure Bulletin, March 1987, https://www.delphion.com/tdb?o=87A%2060509 ,last visited Mar. 8, 2005.	
EE9	K.P.Jackson et al., "High-Density, Array, Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings, IEEE Computer Society Press.	
EE10	TDB:Stackable Circuit Card Packaging within a Logic Cage,IBM Technical Disclosure Bulletin,Dec.1992,https://www.delphion.com/tbds/tdb?o=92A%2063485,last visited Mar.8,2005	
EE11	Jeff Hechi,The Laser Guidebook,2nd ed.,McGraw Hill,Inc.,1992	

## Claim Chart for Claims 139-157 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical
A2	USP2,899,669	module comprising a laser diode module to convert
A3	USP3,264,601	a laser diode electrical signal into a laser diode
A4	USP3,332,860	optical signal and transmit the laser diode optical
A5	USP3,474,380	signal.
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
A14	USP3,805,116	A14 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical
A16	USP3,976,877	module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical
B2	USP4,047,242	module comprising a laser diode module to convert
B3		a laser diode electrical signal into a laser diode
	USP4,156,903	optical signal and transmit the laser diode optical
		signal.
B4		B4 does not disclose, at least, an optical module
	USP4,161,650	comprising a laser diode electrical signal converter
		to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical
B6	USP4,176,897	module comprising a laser diode module to convert
B7		a laser diode electrical signal into a laser diode
	USP4,217,019	optical signal and transmit the laser diode optical
		signal.
B8	USP4,217,488	B8 does not disclose, at least, an optical module

B9	USP4,226,491	comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.  B9 and B10 do not disclose, at least, an optical
B10	USP4,234,968	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B11	USP4,249,266	B11 through B13 do not disclose, at least, an
B12	USP4,252,402	optical module comprising a laser diode electrical
B13	USP4,257,124	signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical
B15	USP4,273,413	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B16	USP4,276,656	B16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter
	001 4,254,002	to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
C2	USP4,295,181	C2 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical
C4	USP4,330,870	module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
C5	USP4,345,808	C5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C6	USP4,347,655	C6 does not disclose, at least, an optical module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to

	which a laser diode module and a photo diode
	module are electrically connected proximate to a
	first edge of the circuit board.
	C7 does not disclose, at least, an optical module
	comprising a laser diode electrical signal converter
USP4,357,606	to convert serial data, which a serial connector
	transfers, into a laser diode electrical signal.
	C8 does not disclose, at least, an optical module
	comprising a laser diode module to convert a laser
USP4,360,248	diode electrical signal into a laser diode optical
	signal and transmit the laser diode optical signal.
	C9 does not disclose, at least, an optical module
	comprising a single circuit board, on which a laser
	diode electrical signal converter are mounted and to
USP4,366,565	which a laser diode module and a photo diode
	module are electrically connected proximate to a
	first edge of the circuit board.
LICD4 260 404	
325	C10 through C15 do not disclose, at least, an
	optical module comprising a laser diode module to
	convert a laser diode electrical signal into a laser
	diode optical signal and transmit the laser diode
	optical signal.
USP4,398,780	
	C16 does not disclose, at least, an optical module
	comprising a single circuit board, on which a laser
USD4 200 562	diode electrical signal converter are mounted and to
08P4,399,303	which a laser diode module and a photo diode
	module are electrically connected proximate to a
	first edge of the circuit board.
	USP4,357,606  USP4,360,248  USP4,369,494  USP4,380,360  USP4,388,671  USP4,393,516  USP4,398,073  USP4,398,780  USP4,399,563

Ref	Title	Distinction between reference(s) and claim(s)
D1		D1 does not disclose, at least, an optical module
:	USP4,408,273	comprising a laser diode module to convert a laser
	051 4,400,275	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical
D3	USP4,427,879	module comprising a laser diode electrical signal
D4		converter to convert serial data, which a serial
	USP4,430,699	connector transfers, into a laser diode electrical
		signal.
D5		D5 does not disclose, at least, an optical module
	USP4,434,537	comprising a laser diode module to convert a laser
	0314,434,337	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
D6	USP4,437,190	D6 does not disclose, at least, an optical module

		land in the state of the state
		comprising a laser diode electrical signal converter
		to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
D7		D7 does not disclose, at least, an optical module
		comprising a single circuit board, on which a laser
	USP4,439,006	diode electrical signal converter are mounted and to
İ	031 4,433,000	which a laser diode module and a photo diode
		module are electrically connected proximate to a
		first edge of the circuit board.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical
D9		module comprising a laser diode electrical signal
	11004 440 244	converter to convert serial data, which a serial
	USP4,449,244	connector transfers, into a laser diode electrical
		signal.
D10	USP4,449,784	D10 through D13 do not disclose, at least, an
D11	USP4,453,903	optical module comprising a laser diode module to
D12	USP4,459,658	convert a laser diode electrical signal into a laser
D13	11004 461 527	diode optical signal and transmit the laser diode
	USP4,461,537	optical signal.
D14		D14 does not disclose, at least, an optical module
	11004 470 154	comprising a laser diode electrical signal converter
	USP4,470,154	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
D15		D15 does not disclose, at least, an optical module
	11004 496 050	comprising a laser diode module to convert a laser
	USP4,486,059	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
D16		D16 does not disclose, at least, an optical module
	HISD4 402 112	comprising a laser diode electrical signal converter
	USP4,493,113	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
E1		E1 does not disclose, at least, an optical module
İ	USP4,501,021	comprising a laser diode electrical signal converter
	03: 4,301,021	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical
E3	USP4,505,035	module comprising a laser diode module to convert
E4	USP4,506,937	a laser diode electrical signal into a laser diode
E5	LICDA 510 552	optical signal and transmit the laser diode optical
	USP4,510,553	signal.
E6		E6 does not disclose, at least, an optical module
	USP4,511,207	comprising a single circuit board, on which a laser
		diode electrical signal converter are mounted and to

		which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical
E8	USP4,516,204	module comprising a laser diode module to convert
E9	USP4,519,670	a laser diode electrical signal into a laser diode
E10	USP4,519,672	optical signal and transmit the laser diode optical
E11	USP4,519,673	signal.
E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	E15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
E16	USP4,529,266	E16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical
F2	USP4,531,810	module comprising a laser diode module to convert
F3	USP4,533,208	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
F4	USP4,533,209	F4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical
F6	USP45,34,617	module comprising a laser diode module to convert
F7	USP4,535,233	a laser diode electrical signal into a laser diode
F8	USP4,537,468	optical signal and transmit the laser diode optical signal.
F9	USP4,539,476	F9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical
F11	USP4,540,246	module comprising a laser diode module to convert
F12	USP4,541,036	a laser diode electrical signal into a laser diode
F13	USP4,541,685	optical signal and transmit the laser diode optical
F14	USP4,542,076	signal.
F15	USP4,544,231	

	Transport of the Control of the Cont
F16 USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G2	USP4,545,074	G2 through G3 do not disclose, at least, an optical
G3	USP4,545,077	module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical
G5	USP4,545,643	module comprising a laser diode module to convert
G6	USP4,545,644	a laser diode electrical signal into a laser diode
G7	USP4,545,645	optical signal and transmit the laser diode optical
G8	USP4,548,465	signal.
G9	USP4,548,466	G9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
G10	USP4,548,467	G10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G11	USP4,549,782	G11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an
G13	USP4,550,975	optical module comprising a laser diode module to
G14	USP4,553,811	convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G15	USP4,553,813	G15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
G16	USP4,553,814	G16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical
H2	USP4,556,281	module comprising a laser diode module to convert
H3	USP4,556,282	a laser diode electrical signal into a laser diode
H4	USP4,557,551	optical signal and transmit the laser diode optical
H5	USP4,560,234	signal.
Н6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an
H13	USP4,588,256	optical module comprising a laser diode module to
H14	USP4,589,728	convert a laser diode electrical signal into a laser
H15	USP4,597,631	diode optical signal and transmit the laser diode
H16	USP4,614,836	optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module
I2	USP4,634,239	comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
I3	USP4,641,371	I3 does not disclose, at least, an optical module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
<u>I4</u>	USP4,647,148	I4 through I16 do not disclose, at least, an optical
I5	USP4,652,976	module comprising a laser diode module to convert
I6	USP4,663,240	a laser diode electrical signal into a laser diode
I7	USP4,663,603	optical signal and transmit the laser diode optical
I8	USP4,678,264	signal.
I9	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	

I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical
J2	USP4,762,388	module comprising a laser diode module to convert
J3	USP4,767,179	a laser diode electrical signal into a laser diode
J4	USP4,772,931	optical signal and transmit the laser diode optical
J5	USP4,779,952	signal.
J6	USP4,789,218	
J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
K2	USP4,844,581	K2 does not disclose, at least, an optical module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical
K4	USP4,847,771	module comprising a laser diode module to convert
K5	USP4,849,944	a laser diode electrical signal into a laser diode
K6	USP4,857,002	optical signal and transmit the laser diode optical
K7	USP4,862,327	signal.
K8	USP4,872,212	
K9	USP4,872,736	

	<del></del>	7740
K10	USP4,881,789	K10 does not disclose, at least, an optical module
		comprising a laser diode electrical signal converter
	03: 4,881,789	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
K11		K11 does not disclose, at least, an optical module
	TICD4 004 226	comprising a laser diode module to convert a laser
	USP4,884,336	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
K12		K12 does not disclose, at least, an optical module
TICD	LICD 4 007 711	comprising a laser diode electrical signal converter
	USP4,897,711	to convert serial data, which a serial connector
ļ		transfers, into a laser diode electrical signal.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an
K14	USP4,927,225	optical module comprising a laser diode module to
K15	USP4,944,568	convert a laser diode electrical signal into a laser
K16		diode optical signal and transmit the laser diode
	USP4,945,448	optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical
L2	USP4,955,817	module comprising a laser diode module to convert
L3	USP4,963,104	a laser diode electrical signal into a laser diode
L4	USP4,967,312	optical signal and transmit the laser diode optical signal.
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical
L7	USP4,979,794	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical
L9	USP4,989,934	module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical
L11	USP4,991,062	module comprising a laser diode module to convert
L12	USP5,002,495	a laser diode electrical signal into a laser diode
L13_	USP5,004,434	optical signal and transmit the laser diode optical
L14	USP5,006,286	signal.
L15	USP5,011,425	_
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical
M2	USP5,035,641	module comprising a laser diode module to convert
M3	USP5,040,993	a laser diode electrical signal into a laser diode
M4	USP5,041,025	optical signal and transmit the laser diode optical signal.
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an
M7_	USP5,045,635	optical module comprising a laser diode module to
M8	USP5,045,971	convert a laser diode electrical signal into a laser
M9	USP5,046,955	diode optical signal and transmit the laser diode
M10	USP5,060,373	optical signal.
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
N1		N1 does not disclose, at least, an optical module
	USP5,091,991	comprising a laser diode module to convert a laser
	031 3,071,771	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
N2		N2 does not disclose, at least, an optical module
	USP5,093,879	comprising a laser diode electrical signal converter
		to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical
N4	USP5,101,463	module comprising a laser diode module to convert
N5	USP5,104,243	a laser diode electrical signal into a laser diode
N6	USP5,107,404	optical signal and transmit the laser diode optical
N7	USP5,108,294	signal.
N8	USP5,109,453	

N9		N9 does not disclose, at least, an optical module
INA	USP5,113,467	
		comprising a laser diode electrical signal converter
		to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an
N11	USP5,117,476	optical module comprising a laser diode module to
N12	USP5,118,362	convert a laser diode electrical signal into a laser
N13	USP5,118,904	diode optical signal and transmit the laser diode
N14	USP5,120,578	optical signal.
N15		N15 does not disclose, at least, an optical module
	HIGD 5 100 000	comprising a laser diode electrical signal converter
	USP5,122,893	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical
N17		module comprising a laser diode module to convert
	77075 105 010	a laser diode electrical signal into a laser diode
	USP5,125,849	optical signal and transmit the laser diode optical
		signal.
N18		N18 does not disclose, at least, an optical module
		comprising a laser diode electrical signal converter
	USP5,127,071	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
N19	USP5,132,871	N19 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
-		signal and transmit the laser diode optical signal.
		1 0

Ref	Title	Distinction between reference(s) and claim(s)
01	USP5,134,677	O1 through O3 do not disclose, at least, an optical
O2	USP5,134,679	module comprising a laser diode module to convert
O3		a laser diode electrical signal into a laser diode
	USP5,136,063	optical signal and transmit the laser diode optical
		signal.
04	USP5,136,152	O4 and O5 do not disclose, at least, an optical
O5		module comprising a laser diode electrical signal
	USP5,136,603	converter to convert serial data, which a serial
		connector transfers, into a laser diode electrical
		signal.
06	USP5,138,537	O6 through O8 do not disclose, at least, an optical
07	USP5,138,678	module comprising a laser diode module to convert
O8		a laser diode electrical signal into a laser diode
	USP5,140,663	optical signal and transmit the laser diode optical
		signal.
09	USP5,155,786	O9 and O10 do not disclose, at least, an optical

O10	USP5,157,769	module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
O11	USP5,167,139	O11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
O12	USP5,168,537	O12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an
014	USP5,171,167	optical module comprising a laser diode module to
015	USP5,173,059	convert a laser diode electrical signal into a laser
016	USP5,183,404	diode optical signal and transmit the laser diode
017	USP5,183,405	optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical
P2	USP5,202,536	module comprising a laser diode module to convert
P3	USP5,207,597	a laser diode electrical signal into a laser diode
P4	USP5,212,752	optical signal and transmit the laser diode optical signal.
P5	USP5,212,754	P5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical
P7	USP5,225,760	module comprising a laser diode module to convert
P8_	USP5,233,676	a laser diode electrical signal into a laser diode
P9	USP5,233,674	optical signal and transmit the laser diode optical
P10	USP5,234,353	signal.
P11	USP5,238,426	
P12	USP5,241,614	P12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
P13	USP5,247,532	P13 does not disclose, at least, an optical module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical

P15	USP5,259,054	module comprising a laser diode module to convert
P16	USP5,262,923	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
P17	USP5,271,079	P17 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Q1		Q1 does not disclose, at least, an optical module
	USP5,274,729	comprising a laser diode module to convert a laser
	USF 3,274,729	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
Q2		Q2 does not disclose, at least, an optical module
	USP5,285,466	comprising a laser diode electrical signal converter
	051 3,203, 100	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
Q3		Q3 does not disclose, at least, an optical module
	USP5,285,511	comprising a laser diode module to convert a laser
	0.210,000,000	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
Q4		Q4 does not disclose, at least, an optical module
	USP5,285,512	comprising a laser diode electrical signal converter
	, ,	to convert serial data, which a serial connector
05	HODE 207 207	transfers, into a laser diode electrical signal.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an optical
Q6	USP5,286,247	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode
Q7	USP5,288,247	optical signal and transmit the laser diode optical
Q8	USP5,289,347	signal.
Q9	USP5,296,813	Signal.
Q10	USP5,299,089	-
Q11	USP5,304,069	-[
Q12	USP5,305,182	-
Q13	USP5,311,408	-
Q14	USP5,315,679	-
Q15	USP5,317,663	-
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical
R2	USP5,333,221	module comprising a laser diode module to convert

R3	USP5,333,225	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R4	USP5,337,391	R4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical
R6	USP5,340,340	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical
R8	USP5,345,530	module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
R9	USP5,353,364	R9 does not disclose, at least, an optical module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an
R11	USP5,356,300	optical module comprising a laser diode module to
R12	USP5,357,402	convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R13	USP5,361,244	R13 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an
R15	USP5,366,664	optical module comprising a laser diode module to
R16	USP5,372,515	convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical
S2	USP5,383,793	module comprising a laser diode module to convert
S3	USP5,388,995	a laser diode electrical signal into a laser diode
S4	USP5,390,268	optical signal and transmit the laser diode optical
<b>S</b> 5	USP5,393,249	signal.
S6	USP5,397,242	

	TIGD 5 200 1 5 4	
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	S10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
S11	USP5,416,668	S11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical
S14	USP5,419,717	module comprising a laser diode module to convert
S15	USP5,424,573	a laser diode electrical signal into a laser diode
S16	USP5,428,703	optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
T1		T1 does not disclose, at least, an optical module
1	USP5,428,704	comprising a laser diode electrical signal converter
	0313,426,704	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical
T3		module comprising a laser diode module to convert
	USP5,443,390	a laser diode electrical signal into a laser diode
	031 3,443,370	optical signal and transmit the laser diode optical
		signal.
T4		T4 does not disclose, at least, an optical module
	USP5,446,814	comprising a laser diode electrical signal converter
	0013,110,011	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
T5		This reference does not qualify as prior art.
	USP5,452,387	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
TOC		1994, in Japan.
T6		T6 does not disclose, at least, an optical module
	USP5,454,080	comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
T7	USP5,455,703	T7 does not disclose, at least, an optical module
		comprising a laser diode electrical signal converter

		to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical
Т9	USP5,469,332	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T10	USP5,470,257	These references do not qualify as prior art.
T11	USP5,470,259	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T12	USP5,475,734	T12 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T13	USP5,477,418	These references do not qualify as prior art.
T14	USP5,478,253	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical
T16	USP5,478,260	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
U1		U1 does not disclose, at least, an optical module
	USP5,481,634	comprising a laser diode module to convert a laser
	001 3,401,034	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
U2		U2 does not disclose, at least, an optical module
	USP5,482,658	comprising a laser diode electrical signal converter
	031 5,482,038	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical
U4		module comprising a laser diode module to convert
	USP5,491,613	a laser diode electrical signal into a laser diode
	USF 3,491,013	optical signal and transmit the laser diode optical
		signal.
U5		This reference does not qualify as prior art.
	USP5,491,712	Applicants have claimed priority to Japanese
	USF 3,491,712	Application No. 06-086691, filed on April 25,
		1994, in Japan.
U6	LICDS 404 747	U6 does not disclose, at least, an optical module
	USP5,494,747	comprising a laser diode module to convert a laser

		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
U7		This reference does not qualify as prior art.
i	USP5,499,311	Applicants have claimed priority to Japanese
1	031 3,477,311	Application No. 06-086691, filed on April 25,
		1994, in Japan.
U8		U8 does not disclose, at least, an optical module
-	USP5,499,312	comprising a laser diode electrical signal converter
	031 3,433,312	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
U9		This reference does not qualify as prior art.
	USP5,504,657	Applicants have claimed priority to Japanese
	031 3,304,037	Application No. 06-086691, filed on April 25,
		1994, in Japan.
U10		U10 does not disclose, at least, an optical module
	USP5,506,921	comprising a laser diode electrical signal converter
	031 3,300,721	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an
U12	USP5,507,668	optical module comprising a laser diode module to
U13	USP5,526,235	convert a laser diode electrical signal into a laser
U14	USP5,527,991	diode optical signal and transmit the laser diode
		optical signal.
U15	USP5,534,662	These references do not qualify as prior art.
U16		Applicants have claimed priority to Japanese
	USP5,535,296	Application No. 06-086691, filed on April 25,
		1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V2	USP5,545,845	These references do not qualify as prior art.
V3	USP5,546,281	Applicants have claimed priority to Japanese
V4	USP5,547,385	Application No. 06-086691, filed on April 25, 1994, in Japan.
V5	USP5,548,641	V5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical
V8	USP5,554,037	module comprising a laser diode module to convert
V9	USP5,567,167	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V10	USP5,577,064	V10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
V11	USP5,580,269	V11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical
V14	USP5,599,595	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art.
W2	USP5,631,998	Applicants have claimed priority to Japanese
W3	USP5,653,596	Application No. 06-086691, filed on April 25, 1994, in Japan.
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
W5	USP5,675,428	These references do not qualify as prior art.
W6	USP5,687,267	Applicants have claimed priority to Japanese
W7	USP5,717,533	Application No. 06-086691, filed on April 25,
W8	USP5,724,729	1994, in Japan.
W9	USP5,726,864	

W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art.
X2	USP5,879,173	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical
X4	EP 0 232792 A1	module comprising a laser diode module to convert
X5	EP.0 228 278	a laser diode electrical signal into a laser diode
X6	EP.0 305112 A2	optical signal and transmit the laser diode optical
		signal.
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical
X8		module comprising a laser diode electrical signal
:	EP.0 413 489 A2	converter to convert serial data, which a serial
	E1.0 415 465 A2	connector transfers, into a laser diode electrical
		signal.
X9		X9 does not disclose, at least, an optical module
	EP.0 437 161 A2	comprising a laser diode module to convert a laser
	EF.0 457 TOT A2	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
X10		X10 does not disclose, at least, an optical module
	EP.0 456 298 B1	comprising a laser diode electrical signal converter
a a	L1 .0 430 230 B1	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
X11		X11 does not disclose, at least, an optical module
	EP.0 530 791 A2	comprising a laser diode module to convert a laser
	LI .0 330 771 A2	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an
X13	EP.0 588 014 A2	optical module comprising a laser diode electrical
X14		signal converter to convert serial data, which a
	EP.0 600 645 A1	serial connector transfers, into a laser diode
		electrical signal.
X15		X15 does not disclose, at least, an optical module
		comprising a single circuit board, on which a laser
	EP.0 613 032 A2	diode electrical signal converter are mounted and
		to which a laser diode module and a photo diode
		module are electrically connected proximate to a

		first edge of the circuit board.
X16	EP.0 652 696 A1	X16 thorugh X18 do not disclose, at least, an
X17	EP.0 656 696 A1	optical module comprising a laser diode module to
X18	EP.0 662 259 B1	convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X19	EP.442 608 A2	X19 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical
X21	JP.1-237783	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical
Y2	JP.2-181710	module comprising a laser diode electrical signal
Y3	JP.2-278212	converter to convert serial data, which a serial
Y4	JP.2-87837	connector transfers, into a laser diode electrical signal.
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical
Y6	JP.3-94869	module comprising a laser diode module to convert
Y7		a laser diode electrical signal into a laser diode
	JP.4-109593	optical signal and transmit the laser diode optical
		signal.
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical
Y9	JP.4-165312	module comprising a laser diode electrical signal
Y10		converter to convert serial data, which a serial
	JP.4-211208	connector transfers, into a laser diode electrical
		signal.
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an
Y12	JP.4-229962	optical module comprising a laser diode module to
Y13		convert a laser diode electrical signal into a laser
	JP.4-230978	diode optical signal and transmit the laser diode
		optical signal.
Y14		Y14 does not disclose, at least, an optical module
	JP.4-234715	comprising a laser diode electrical signal converter
		to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an
Y16	JP.4-50901	optical module comprising a laser diode module to
Y17	JP.4-87809	convert a laser diode electrical signal into a laser

Y18	JP.5-052802	diode optical signal and transmit the laser diode optical signal.
Y19	JP.5-134147	Y19 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical
Z2	·	module comprising a laser diode electrical signal
	JP.5-188250	converter to convert serial data, which a serial
	Jr.J-188230	connector transfers, into a laser diode electrical
		signal.
<b>Z</b> 3		Z3 does not disclose, at least, an optical module
	JP.5-211379	comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
Z4		Z4 does not disclose, at least, an optical module
	JP.5-218581	comprising a laser diode electrical signal converter
		to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
Z5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical
$\frac{Z_3}{Z_6}$	JP.5-70955	module comprising a laser diode module to convert
Z7	JP.61-158046	a laser diode electrical signal into a laser diode
$\frac{Z7}{Z8}$		optical signal and transmit the laser diode optical
20	JP.61-188385	signal.
Z9		Z9 does not disclose, at least, an optical module
		comprising a single circuit board, on which a laser
	ID (2.000225	diode electrical signal converter are mounted and
	JP.63-009325	to which a laser diode module and a photo diode
		module are electrically connected proximate to a
		first edge of the circuit board.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an
Z11	JP.63-65967	optical module comprising a laser diode module to
Z12	JP.63-65978	convert a laser diode electrical signal into a laser
Z13	JP.63-82998	diode optical signal and transmit the laser diode
Z14	U-3-20458	optical signal.
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)

AAl	U-61-188385	AA1 through AA5 do not disclose, at least, an
AA2	U-63-16496	optical module comprising a laser diode module to
AA3	U-63-65967	convert a laser diode electrical signal into a laser
AA4	U-63-65978	diode optical signal and transmit the laser diode
AA5	U-63-82998	optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB2	Ronald LSoderstrom et al.,"An optical Date Link using a CD laser", SPIE Vol. 1577 High Speed Fiber Networks and Channels, pp. 163-173, 1991	BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode electrical
BB3	BCP,Inc."Gigabits Over Multimode Optical Fiber"no date	signal converter to convert serial data, which a
BB4	Ronald L.Soderstrom et al.,"CD laser optical Date Links for Workstation and Midrange Computers",IEEE p.505-509,1993.	serial connector transfers, into a laser diode electrical signal.
BB5	FDDI Low-Cost Fiber Phyiscal Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	BB5 does not disclose, at least, an optical module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
BB6	HP Module HFBR-5103, FDDI Data Sheet,http://www.hp.com/HP- COMP/fiber/hfbr5103.html,Jun.11,1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module to convert
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System".www.patents.ibm.com/tdbs/tdb?ℴ=93A +60964,April 1993	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB8	IBM, "A Proposal for a New High Performance "OptopElectronics Enterprise Oct.1992 ANSI Meeting,Oct.13,1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode electrical signal
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	BB10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	BB11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications," June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser

		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Sandards?" no date.	CC3 through CC5 do not disclose, at least, an
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	optical module comprising a laser diode electrical signal converter to convert serial data, which a
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	serial connector transfers, into a laser diode electrical signal.
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	CC7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	CC8 and CC9 do not disclose, at least, an optical module comprising a laser diode module to convert
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454.definition of LED, Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
CC11	Edward R.Salmon, Encapsulation of Electronic Devices and Components, Marcel Deckker Inc., New York, 1987	CC11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conducive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode module to
DD2	HEADS UpSumitomo Electric Lightwave joins Other in Announcement, May 11,1995	convert a laser diode electrical signal into a laser
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	diode optical signal and transmit the laser diode optical signal.
DD4	Shortwave Opto Assembly, IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev.1, Jan.6, 1993	DD4 and DD5 do not disclose, at least, an optical module comprising a laser diode electrical signal
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge", IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar., 1987	converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
DD6	Japanese Standards Association " F04 Type	DD6 does not disclose, at least, an optical module

	Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.  Ronald LSoderstrom et al., A Miniaturized Fiber Optic	comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
DD7	Laser Receptacle Using a Compact Disk(CD)··· FOC/LAN'87&MFOC-WEST,pp.383-385,no date.	DD7 through DD9 do not disclose, at least, an optical module comprising a laser diode electrical
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
DD9	Ronald L.Soderstrom et al., Optical Components and Electronic Packaging for High Performance Optical Date Links, THE RESEARCH INVESTMENT, p. 19-28 (no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute, 1996.	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer date links", Fiber Optic Datacom and Computer Networks, SPIE-The International Society for Optical Engineerdings, Vol. 1577, pp. 174-181, 1988	
EE5	David A.Knodel et al.,"Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34, No.7B, Dec. 1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge, IBM Technical Disclosure Bulletin, March 1987, https://www.delphion.com/tdb?o=87A%2060509 ,last visited Mar.8,2005.	

EE9	K.P.Jackson et al.,"High-Density,Array,Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings,IEEE Computer Society Press.
	TDB:Stackable Circuit Card Packaging within a Logic Cage,IBM Technical Disclosure
EE10	Bulletin,Dec.1992,https://www.delphion.com/tbds/tdb?o=92A%2063485,last visited Mar.8,2005
EE11	Jeff Hechi, The Laser Guidebook, 2nd ed., McGraw Hill, Inc., 1992

## Claim Chart for Claims 158 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A16 do not disclose, at least, a module
A2	USP2,899,669	cap comprising a first elastic part to protect a laser
A3	USP3,264,601	diode module and a second elastic part to protect a
A4	USP3,332,860	photo diode module, and being removably
A5	USP3,474,380	attachable to an optical module.
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	
A14	USP3,805,116	
A15	USP3,809,908	
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B16 do not disclose, at least, a module
B2	USP4,047,242	cap comprising a first elastic part to protect a laser
В3	USP4,156,903	diode module and a second elastic part to protect a
B4	USP4,161,650	photo diode module, and being removably
B5	USP4,167,303	attachable to an optical module.
В6	USP4,176,897	
B7	USP4,217,019	
B8	USP4,217,488	
B9	USP4,226,491	
B10	USP4,234,968	
B11	USP4,249,266	
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	
B15	USP4,273,413	
B16	USP4,276,656	

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 through C16 do not disclose, at least, a module
C2	USP4,295,181	cap comprising a first elastic part to protect a laser
C3	USP4,301,543	diode module and a second elastic part to protect a
C4	USP4,330,870	photo diode module, and being removably

C5	USP4,345,808	attachable to an optical module.
C6	USP4,347,655	
C7	USP4,357,606	
C8	USP4,360,248	
C9	USP4,366,565	
C10	USP4,369,494	
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 through D16 do not disclose, at least, a module
D2	USP4,422,088	cap comprising a first elastic part to protect a laser
D3	USP4,427,879	diode module and a second elastic part to protect a
D4	USP4,430,699	photo diode module, and being removably
D5	USP4,434,537	attachable to an optical module.
D6	USP4,437,190	
D7	USP4,439,006	
D8	USP4,446,515	
D9	USP4,449,244	
D10	USP4,449,784	
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	
D15	USP4,486,059	
D16	USP4,493,113	

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 through E16 do not disclose, at least, a module
E2	USP4,502,130	cap comprising a first elastic part to protect a laser
E3	USP4,505,035	diode module and a second elastic part to protect a
E4	USP4,506,937	photo diode module, and being removably
E5	USP4,510,553	attachable to an optical module.
E6	USP4,511,207	
E7	USP4,514,586	
E8	USP4,516,204	
E9	USP4,519,670	
E10	USP4,519,672	
E11	USP4,519,673	

E12	USP4,522,463		
E13	USP4,526,438		
E14	USP4,526,986		
E15	USP4,527,286		
E16	USP4,529,266		

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F16 do not disclose, at least, a module
F2	USP4,531,810	cap comprising a first elastic part to protect a laser
F3	USP4,533,208	diode module and a second elastic part to protect a
F4	USP4,533,209	photo diode module, and being removably
F5	USP4,534,616	attachable to an optical module.
F6	USP45,34,617	
F7	USP4,535,233	
F8	USP4,537,468	
F9	USP4,539,476	
F10	USP4,540,237	
F11	USP4,540,246	
F12	USP4,541,036	
F13	USP4,541,685	
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 through G16 do not disclose, at least, a module
G2	USP4,545,074	cap comprising a first elastic part to protect a laser
G3	USP4,545,077	diode module and a second elastic part to protect a
G4	USP4,545,642	photo diode module, and being removably
G5	USP4,545,643	attachable to an optical module.
G6	USP4,545,644	
G7	USP4,545,645	
G8	USP4,548,465	
G9_	USP4,548,466	
G10	USP4,548,467	
G11	USP4,549,782	
G12	USP4,549,783	
G13	USP4,550,975	
G14	USP4,553,811	
G15	USP4,553,813	
G16	USP4,553,814	

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H16 do not disclose, at least, a module
H2	USP4,556,281	cap comprising a first elastic part to protect a laser
H3	USP4,556,282	diode module and a second elastic part to protect a
H4	USP4,557,551	photo diode module, and being removably
H5	USP4,560,234	attachable to an optical module.
Н6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	
H12	USP4,580,872	
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	Il through I16 do not disclose, at least, a module
I2	USP4,634,239	cap comprising a first elastic part to protect a laser
I3	USP4,641,371	diode module and a second elastic part to protect a
<b>I4</b>	USP4,647,148	photo diode module, and being removably
15	USP4,652,976	attachable to an optical module.
I6	USP4,663,240	
17	USP4,663,603	
18	USP4,678,264	
19	USP4,679,883	
I10	USP4,695,106	
I111	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J16 do not disclose, at least, a module
J2	USP4,762,388	cap comprising a first elastic part to protect a laser
J3	USP4,767,179	diode module and a second elastic part to protect a
J4	USP4,772,931	photo diode module, and being removably
J5	USP4,779,952	attachable to an optical module.
J6	USP4,789,218	

J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 through K16 do not disclose, at least, a module
K2	USP4,844,581	cap comprising a first elastic part to protect a laser
K3	USP4,847,711	diode module and a second elastic part to protect a
K4	USP4,847,771	photo diode module, and being removably
K5	USP4,849,944	attachable to an optical module.
K6	USP4,857,002	
K7	USP4,862,327	
K8	USP4,872,212	
K9	USP4,872,736	
K10	USP4,881,789	
K11	USP4,884,336	
K12	USP4,897,711	
K13	USP4,906,197	
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L16 do not disclose, at least, a module
L2	USP4,955,817	cap comprising a first elastic part to protect a laser
L3	USP4,963,104	diode module and a second elastic part to protect a
L4	USP4,967,312	photo diode module, and being removably
L5	USP4,977,329	attachable to an optical module.
L6	USP4,979,793	
L7	USP4,979,794	
L8	USP4,986,625	
L9	USP4,989,934	
L10	USP4,990,104	
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	

L14	USP5,006,286	
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M16 do not disclose, at least, a module
M2	USP5,035,641	cap comprising a first elastic part to protect a laser
M3	USP5,040,993	diode module and a second elastic part to protect a
M4	USP5,041,025	photo diode module, and being removably
M5	USP5,043,775	attachable to an optical module.
M6	USP5,044,982	
M7	USP5,045,635	
M8	USP5,045,971	
M9	USP5,046,955	
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	
M16	USP5,086,422	

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 through N19 do not disclose, at least, a module
N2	USP5,093,879	cap comprising a first elastic part to protect a laser
N3	USP5,094,623	diode module and a second elastic part to protect a
N4	USP5,101,463	photo diode module, and being removably
N5	USP5,104,243	attachable to an optical module.
N6	USP5,107,404	
N7	USP5,108,294	
N8	USP5,109,453	
N9	USP5,113,467	
N10	USP5,116,239	
N11	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	
N16	USP5,124,885	
N17	USP5,125,849	
N18	USP5,127,071	
N19	USP5,132,871	

Ref	Title	Distinction between reference(s) and claim(s)
O1_	USP5,134,677	O1 through O17 do not disclose, at least, a module
O2	USP5,134,679	cap comprising a first elastic part to protect a laser
O3	USP5,136,063	diode module and a second elastic part to protect a
O4_	USP5,136,152	photo diode module, and being removably
O5	USP5,136,603	attachable to an optical module.
06	USP5,138,537	
O7	USP5,138,678	
O8	USP5,140,663	
09	USP5,155,786	
O10	USP5,157,769	
011	USP5,167,139	
O12	USP5,168,537	
O13	USP5,170,146	
O14	USP5,171,167	
015	USP5,173,059	
016	USP5,183,404	
017	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P17 do not disclose, at least, a module
P2	USP5,202,536	cap comprising a first elastic part to protect a laser
P3	USP5,207,597	diode module and a second elastic part to protect a
P4	USP5,212,752	photo diode module, and being removably
P5	USP5,212,754	attachable to an optical module.
P6	USP5,218,519	
P7	USP5,225,760	
P8	USP5,233,676	
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	
P13	USP5,247,532	
P14	USP5,259,052	·
P15_	USP5,259,054	
P16	USP5,262,923	
P17	USP5,271,079	

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 through Q16 do not disclose, at least, a module
Q2	USP5,285,466	cap comprising a first elastic part to protect a laser
Q3	USP5,285,511	diode module and a second elastic part to protect a

Q4	USP5,285,512	photo diode module, and being removably
Q5	USP5,286,207	attachable to an optical module.
Q6	USP5,286,247	
Q7	USP5,288,247	
Q8	USP5,289,347	
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R16 do not disclose, at least, a module
R2	USP5,333,221	cap comprising a first elastic part to protect a laser
R3	USP5,333,225	diode module and a second elastic part to protect a
R4	USP5,337,391	photo diode module, and being removably
R5	USP5,337,396	attachable to an optical module.
R6	USP5,340,340	
R7	USP5,345,524	
R8	USP5,345,530	
R9	USP5,353,364	
R10	USP5,353,634	
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	
R14	USP5,361,318	
R15	USP5,366,664	
R16	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S16 do not disclose, at least, a module
S2	USP5,383,793	cap comprising a first elastic part to protect a laser
S3	USP5,388,995	diode module and a second elastic part to protect a
S4	USP5,390,268	photo diode module, and being removably
S5	USP5,393,249	attachable to an optical module.
S6	USP5,397,242	
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	

S11	USP5,416,668
S12	USP5,416,870
S13	USP5,416,872
S14	USP5,419,717
S15	USP5,424,573
S16	USP5,428,703

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 through T4 do not disclose, at least, a module
T2	USP5,434,747	cap comprising a first elastic part to protect a laser
T3	USP5,443,390	diode module and a second elastic part to protect a
T4	USP5,446,814	photo diode module, and being removably
	USF 3,440,814	attachable to an optical module.
T5		This reference does not qualify as prior art.
	USP5,452,387	Applicants have claimed priority to Japanese
	031 5,452,367	Application No. 06-086691, filed on April 25,
_		1994, in Japan.
T6_	USP5,454,080	T6 through T9 do not disclose, at least, a module
T7	USP5,455,703	cap comprising a first elastic part to protect a laser
T8	USP5,463,532	diode module and a second elastic part to protect a
T9	USP5,469,332	photo diode module, and being removably
ļ		attachable to an optical module.
T10	USP5,470,257	These references do not qualify as prior art.
T11		Applicants have claimed priority to Japanese
	USP5,470,259	Application No. 06-086691, filed on April 25,
		1994, in Japan.
T12		T12 does not disclose, at least, a module cap
		comprising a first elastic part to protect a laser
	USP5,475,734	diode module and a second elastic part to protect a
		photo diode module, and being removably
	110DC 427 410	attachable to an optical module.
T13	USP5,477,418	These references do not qualify as prior art.
T14	HGD5 470 053	Applicants have claimed priority to Japanese
	USP5,478,253	Application No. 06-086691, filed on April 25,
T1.5	LICDS 479 250	1994, in Japan.
T15	USP5,478,259	T15 and T16 do not disclose, at least, a module cap
T16		comprising a first elastic part to protect a laser
	USP5,478,260	diode module and a second elastic part to protect a
		photo diode module, and being removably
		attachable to an optical module.

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 through U4 do not disclose, at least, a module
U2	USP5,482,658	cap comprising a first elastic part to protect a laser

U3	USP5,487,678	diode module and a second elastic part to protect a
U4		photo diode module, and being removably
	USP5,491,613	attachable to an optical module.
U5		This reference does not qualify as prior art.
	USP5,491,712	Applicants have claimed priority to Japanese
	0373,491,712	Application No. 06-086691, filed on April 25,
		1994, in Japan.
U6		U6 does not disclose, at least, a module cap
		comprising a first elastic part to protect a laser
	USP5,494,747	diode module and a second elastic part to protect a
		photo diode module, and being removably
		attachable to an optical module.
U7		This reference does not qualify as prior art.
	USP5,499,311	Applicants have claimed priority to Japanese
	031 3,437,311	Application No. 06-086691, filed on April 25,
		1994, in Japan.
U8		U8 does not disclose, at least, a module cap
	USP5,499,312	comprising a first elastic part to protect a laser
		diode module and a second elastic part to protect a
		photo diode module, and being removably
		attachable to an optical module.
U9		This reference does not qualify as prior art.
	USP5,504,657	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
7710	11005 506 001	1994, in Japan.
U10	USP5,506,921	U10 through U14 do not disclose, at least, a
U11	USP5,506,922	module cap comprising a first elastic part to protect
U12	USP5,507,668	a laser diode module and a second elastic part to
U13	USP5,526,235	protect a photo diode module, and being removably
U14	USP5,527,991	attachable to an optical module.
U15	USP5,534,662	These references do not qualify as prior art.
U16		Applicants have claimed priority to Japanese
	USP5,535,296	Application No. 06-086691, filed on April 25,
		1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
V2	USP5,545,845	These references do not qualify as prior art.
V3	USP5,546,281	Applicants have claimed priority to Japanese
V4	USP5,547,385	Application No. 06-086691, filed on April 25, 1994, in Japan.

V5		V5 does not disclose, at least, a module cap
"		comprising a first elastic part to protect a laser
	USP5,548,641	diode module and a second elastic part to protect a
	001 3,3 10,0 11	photo diode module, and being removably
		attachable to an optical module.
V6		This reference does not qualify as prior art.
**		Applicants have claimed priority to Japanese
	USP5,548,677	Application No. 06-086691, filed on April 25,
		1994, in Japan.
V7	USP5,554,031	V7 through V11 do not disclose, at least, a module
V8	USP5,554,037	cap comprising a first elastic part to protect a laser
V9	USP5,567,167	diode module and a second elastic part to protect a
<b></b>		photo diode module, and being removably
V10	USP5,577,064	attachable to an optical module.
V11	USP5,580,269	
V12		This reference does not qualify as prior art.
	USP5,588,850	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
7710	HGD 5 500 210	1994, in Japan.
V13	USP5,598,319	V13 through V15 do not disclose, at least, a
V14	USP5,599,595	module cap comprising a first elastic part to protect
V15		a laser diode module and a second elastic part to
	USP5,600,470	protect a photo diode module, and being removably
		attachable to an optical module.
V16		This reference does not qualify as prior art.
	USP5,613,860	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art.
W2	USP5,631,998	Applicants have claimed priority to Japanese
W3	USP5,653,596	Application No. 06-086691, filed on April 25, 1994, in Japan.
W4	USP5,659,459	W4 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
W5	USP5,675,428	These references do not qualify as prior art.
W6	USP5,687,267	Applicants have claimed priority to Japanese
W7	USP5,717,533	Application No. 06-086691, filed on April 25,
W8	USP5,724,729	1994, in Japan.
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	

W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art.
X2	USP5,879,173	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.
X3	DE.4239124 A1	X3 through X21 do not disclose, at least, a module
X4	EP 0 232792 A1	cap comprising a first elastic part to protect a laser
X5	EP.0 228 278	diode module and a second elastic part to protect a
X6	EP.0 305112 A2	photo diode module, and being removably
X7	EP.0 314 651 A2	attachable to an optical module.
X8	EP.0 413 489 A2	
X9	EP.0 437 161 A2	
X10	EP.0 456 298 B1	
X11	EP.0 530 791 A2	
X12	EP.0 535 473 A1	
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	
X16	EP.0 652 696 A1	
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	
X20	WO 94/12900	
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y19 do not disclose, at least, a module
Y2	JP.2-181710	cap comprising a first elastic part to protect a laser
Y3	JP.2-278212	diode module and a second elastic part to protect a
Y4	JP.2-87837	photo diode module, and being removably
Y5	JP.3-20458	attachable to an optical module.
Y6	JP.3-94869	
Y7	JP.4-109593	
Y8	JP.4-122905	
<u>Y9</u>	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	

Y12	JP.4-229962	
Y13	JP.4-230978	
Y14	JP.4-234715	
Y15	JP.4-270305	
Y16	JP.4-50901	
Y17	JP.4-87809	
Y18	JP.5-052802	
Y19	JP.5-134147	

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 through Z19 do not disclose, at least, a module
Z2	JP.5-188250	cap comprising a first elastic part to protect a laser
Z3	JP.5-211379	diode module and a second elastic part to protect a
Z4	JP.5-218581	photo diode module, and being removably
<b>Z</b> 5	JP.5-290913	attachable to an optical module.
Z6	JP.5-70955	
<u>Z7</u>	JP.61-158046	
Z8	JP.61-188385	
Z9	JP.63-009325	
Z10	JP.63-16496	
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, a
AA2	U-63-16496	module cap comprising a first elastic part to protect
AA3	U-63-65967	a laser diode module and a second elastic part to
AA4	U-63-65978	protect a photo diode module, and being removably
AA5	U-63-82998	attachable to an optical module.

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 through BB11 do not disclose, at least, a
BB2	Ronald LSoderstrom et al.,"An optical Date Link using a CD laser", SPIE Vol. 1577 High Speed Fiber Networks and Channels, pp. 163-173, 1991	module cap comprising a first elastic part to protect a laser diode module and a second elastic part to
BB3	BCP,Inc. "Gigabits Over Multimode Optical Fiber"no date	protect a photo diode module, and being removably

BB4	Ronald L.Soderstrom et al., "CD laser optical Date Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	attachable to an optical module.
BB5	FDDI Low-Cost Fiber Phyiscal Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	
BB6	HP Module HFBR-5103, FDDI Data Sheet,http://www.hp.com/HP- COMP/fiber/hfbr5103.html,Jun.11,1998	
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System".www.patents.ibm.com/tdbs/tdb?ℴ=93A +60964,April 1993	
BB8	IBM, "A Proposal for a New High Performance "OptopElectronics Enterprise Oct.1992 ANSI Meeting,Oct.13,1992	
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet (no date)	
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Sandards?" no date.	CC3 through CC11 not disclose, at least, a module
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922,Dec.1993.	photo diode module, and being removably
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	attachable to an optical module.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991	
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454. definition of LED, Van Nostrand Reinhold Co.	
CC11	Edward R.Salmon, Encapsulation of Electronic Devices and Components, Marcel Deckker Inc., New York, 1987	

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conducive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD11 do not disclose, at least, a module cap comprising a first elastic part to protect

DD2	HEADS UpSumitomo Electric Lightwave joins Other in Announcement, May 11,1995	a laser diode module and a second elastic part to
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	protect a photo diode module, and being removably attachable to an optical module.
DD4	Shortwave Opto Assembly, IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev. 1, Jan. 6, 1993	
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association, 1990.	
DD7	Ronald LSoderstrom et al., A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD) FOC/LAN'87&MFOC-WEST,pp.383-385,no date.	
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	
DD9	Ronald L.Soderstrom et al., Optical Components and Electronic Packaging for High Performance Optical Date Links, THE RESEARCH INVESTMENT, p. 19-28 (no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb. 1994 pp. 58,67.	

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute,1996.	EE1 through EE11 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber, Van Nostrand Reinhold Publishing, 1983	protect a photo diode module, and being removably attachable to an optical module.
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	a
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer date links", Fiber Optic Datacom and Computer Networks, SPIE-The International Society for Optical Engineerdings, Vol. 1577, pp. 174-181, 1988	
EE5	David A.Knodel et al.,"Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34, No.7B, Dec. 1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge, IBM Technical Disclosure Bulletin, March 1987, https://www.delphion.com/tdb?o=87A%2060509 ,last visited Mar. 8, 2005.	

EE9	K.P.Jackson et al., "High-Density, Array, Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings, IEEE Computer Society Press.
EE10	TDB:Stackable Circuit Card Packaging within a Logic Cage,IBM Technical Disclosure
LEIV	Bulletin,Dec.1992,https://www.delphion.co m/tbds/tdb?o=92A%2063485,last visited Mar.8,2005
EE11	Jeff Hechi, The Laser Guidebook, 2nd ed., McGraw Hill, Inc., 1992

196/468

## Claim Chart for Claims 159-162 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
Al	Re.32,502	A1 through A16 do not disclose, at least, a module
A2	USP2,899,669	cap comprising a first elastic part to protect a laser
A3	USP3,264,601	diode module and a second elastic part to protect a
A4	USP3,332,860	photo diode module, such that the first elastic part
A5	USP3,474,380	and the second elastic part protect the laser diode
A6	USP3,497,866	module and the photo diode module from foreign
A7	USP3,523,269	matter when the module cap is removably attached
A8	USP3,670,290	to an optical module.
<b>A</b> 9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	
A14	USP3,805,116	
A15	USP3,809,908	
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B16 do not disclose, at least, a module
B2	USP4,047,242	cap comprising a first elastic part to protect a laser
В3	USP4,156,903	diode module and a second elastic part to protect a
B4	USP4,161,650	photo diode module, such that the first elastic part
B5	USP4,167,303	and the second elastic part protect the laser diode
B6	USP4,176,897	module and the photo diode module from foreign
B7	USP4,217,019	matter when the module cap is removably attached
B8	USP4,217,488	to an optical module.
B9	USP4,226,491	
B10	USP4,234,968	
B11	USP4,249,266	
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	
B15	USP4,273,413	
B16	USP4,276,656	

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 through C16 do not disclose, at least, a module
C2	USP4,295,181	cap comprising a first elastic part to protect a laser
C3	USP4,301,543	diode module and a second elastic part to protect a
C4	USP4,330,870	photo diode module, such that the first elastic part

C5	USP4,345,808	and the second elastic part protect the laser diode
C6	USP4,347,655	module and the photo diode module from foreign
C7	USP4,357,606	matter when the module cap is removably attached
C8	USP4,360,248	to an optical module.
C9	USP4,366,565	
C10	USP4,369,494	
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 through D16 do not disclose, at least, a module
D2	USP4,422,088	cap comprising a first elastic part to protect a laser
D3	USP4,427,879	diode module and a second elastic part to protect a
D4	USP4,430,699	photo diode module, such that the first elastic part
D5	USP4,434,537	and the second elastic part protect the laser diode
D6	USP4,437,190	module and the photo diode module from foreign
D7	USP4,439,006	matter when the module cap is removably attached
D8	USP4,446,515	to an optical module.
D9	USP4,449,244	
D10	USP4,449,784	
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	
D15	USP4,486,059	
D16	USP4,493,113	

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 through E16 do not disclose, at least, a module
E2	USP4,502,130	cap comprising a first elastic part to protect a laser
E3	USP4,505,035	diode module and a second elastic part to protect a
E4	USP4,506,937	photo diode module, such that the first elastic part
E5	USP4,510,553	and the second elastic part protect the laser diode
E6	USP4,511,207	module and the photo diode module from foreign
E7	USP4,514,586	matter when the module cap is removably attached
E8	USP4,516,204	to an optical module.
E9	USP4,519,670	
E10	USP4,519,672	]
E11	USP4,519,673	

E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	
E16	USP4,529,266	

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F16 do not disclose, at least, a module
F2	USP4,531,810	cap comprising a first elastic part to protect a laser
F3	USP4,533,208	diode module and a second elastic part to protect a
F4	USP4,533,209	photo diode module, such that the first elastic part
F5	USP4,534,616	and the second elastic part protect the laser diode
F6	USP45,34,617	module and the photo diode module from foreign
F7	USP4,535,233	matter when the module cap is removably attached
F8	USP4,537,468	to an optical module.
F9	USP4,539,476	
F10	USP4,540,237	
F11	USP4,540,246	
F12	USP4,541,036	
F13	USP4,541,685	
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 through G16 do not disclose, at least, a module
G2	USP4,545,074	cap comprising a first elastic part to protect a laser
G3	USP4,545,077	diode module and a second elastic part to protect a
G4	USP4,545,642	photo diode module, such that the first elastic part
G5	USP4,545,643	and the second elastic part protect the laser diode
G6	USP4,545,644	module and the photo diode module from foreign
G7	USP4,545,645	matter when the module cap is removably attached
G8	USP4,548,465	to an optical module.
G9	USP4,548,466	
G10	USP4,548,467	
G11	USP4,549,782	
G12	USP4,549,783	
G13	USP4,550,975	
G14	USP4,553,811	
G15	USP4,553,813	
G16	USP4,553,814	

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H16 do not disclose, at least, a module
H2	USP4,556,281	cap comprising a first elastic part to protect a laser
H3	USP4,556,282	diode module and a second elastic part to protect a
H4	USP4,557,551	photo diode module, such that the first elastic part
H5	USP4,560,234	and the second elastic part protect the laser diode
Н6	USP4,563,057	module and the photo diode module from foreign
H7	USP4,566,753	matter when the module cap is removably attached
H8	USP4,568,145	to an optical module.
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	
H12	USP4,580,872	
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 through I16 do not disclose, at least, a module
I2	USP4,634,239	cap comprising a first elastic part to protect a laser
I3	USP4,641,371	diode module and a second elastic part to protect a
I4	USP4,647,148	photo diode module, such that the first elastic part
I5	USP4,652,976	and the second elastic part protect the laser diode
I6	USP4,663,240	module and the photo diode module from foreign
I7	USP4,663,603	matter when the module cap is removably attached
18	USP4,678,264	to an optical module.
I9	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J16 do not disclose, at least, a module
J2	USP4,762,388	cap comprising a first elastic part to protect a laser
J3	USP4,767,179	diode module and a second elastic part to protect a
J4	USP4,772,931	photo diode module, such that the first elastic part
J5	USP4,779,952	and the second elastic part protect the laser diode
J6	USP4,789,218	module and the photo diode module from foreign

J7	USP4,798,430	matter when the module cap is removably attached
J8	USP4,798,440	to an optical module.
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 through K16 do not disclose, at least, a module
K2	USP4,844,581	cap comprising a first elastic part to protect a laser
K3	USP4,847,711	diode module and a second elastic part to protect a
K4	USP4,847,771	photo diode module, such that the first elastic part
K5	USP4,849,944	and the second elastic part protect the laser diode
K6	USP4,857,002	module and the photo diode module from foreign
K7	USP4,862,327	matter when the module cap is removably attached
K8	USP4,872,212	to an optical module.
K9	USP4,872,736	
K10	USP4,881,789	
K11	USP4,884,336	
K12	USP4,897,711	
K13	USP4,906,197	
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L16 do not disclose, at least, a module
L2	USP4,955,817	cap comprising a first elastic part to protect a laser
L3	USP4,963,104	diode module and a second elastic part to protect a
L4	USP4,967,312	photo diode module, such that the first elastic part
L5	USP4,977,329	and the second elastic part protect the laser diode
L6	USP4,979,793	module and the photo diode module from foreign
L7	USP4,979,794	matter when the module cap is removably attached
L8	USP4,986,625	to an optical module.
L9	USP4,989,934	
L10	USP4,990,104	
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	

L14	USP5,006,286	
L15	USP5,011,425	•
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M16 do not disclose, at least, a module
M2	USP5,035,641	cap comprising a first elastic part to protect a laser
M3	USP5,040,993	diode module and a second elastic part to protect a
M4	USP5,041,025	photo diode module, such that the first elastic part
M5	USP5,043,775	and the second elastic part protect the laser diode
M6	USP5,044,982	module and the photo diode module from foreign
M7	USP5,045,635	matter when the module cap is removably attached
M8	USP5,045,971	to an optical module.
M9	USP5,046,955	
M10	USP5,060,373	· I
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	
M16	USP5,086,422	

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 through N19 do not disclose, at least, a module
N2	USP5,093,879	cap comprising a first elastic part to protect a laser
N3	USP5,094,623	diode module and a second elastic part to protect a
N4	USP5,101,463	photo diode module, such that the first elastic part
N5	USP5,104,243	and the second elastic part protect the laser diode
N6	USP5,107,404	module and the photo diode module from foreign
N7	USP5,108,294	matter when the module cap is removably attached
N8	USP5,109,453	to an optical module.
N9	USP5,113,467	
N10	USP5,116,239	
N11	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	
N16	USP5,124,885	
N17	USP5,125,849	
N18	USP5,127,071	
N19	USP5,132,871	

Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O17 do not disclose, at least, a module
O2	USP5,134,679	cap comprising a first elastic part to protect a laser
O3	USP5,136,063	diode module and a second elastic part to protect a
O4	USP5,136,152	photo diode module, such that the first elastic part
O5	USP5,136,603	and the second elastic part protect the laser diode
06	USP5,138,537	module and the photo diode module from foreign
O7	USP5,138,678	matter when the module cap is removably attached
08	USP5,140,663	to an optical module.
09	USP5,155,786	
O10	USP5,157,769	
O11	USP5,167,139	
O12	USP5,168,537	
O13	USP5,170,146	
O14	USP5,171,167	
O15	USP5,173,059	
016	USP5,183,404	
017	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P17 do not disclose, at least, a module
P2	USP5,202,536	cap comprising a first elastic part to protect a laser
P3	USP5,207,597	diode module and a second elastic part to protect a
P4	USP5,212,752	photo diode module, such that the first elastic part
P5	USP5,212,754	and the second elastic part protect the laser diode
P6	USP5,218,519	module and the photo diode module from foreign
P7	USP5,225,760	matter when the module cap is removably attached
P8	USP5,233,676	to an optical module.
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	
P13	USP5,247,532	
P14	USP5,259,052	
P15	USP5,259,054	
P16	USP5,262,923	
P17	USP5,271,079	

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 through Q16 do not disclose, at least, a module
Q2	USP5,285,466	cap comprising a first elastic part to protect a laser
Q3	USP5,285,511	diode module and a second elastic part to protect a

Q4	USP5,285,512	photo
Q5	USP5,286,207	and t
Q6	USP5,286,247	modı
Q7	USP5,288,247	matte
Q8	USP5,289,347	to an
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R16 do not disclose, at least, a module
R2	USP5,333,221	cap comprising a first elastic part to protect a laser
R3	USP5,333,225	diode module and a second elastic part to protect a
R4	USP5,337,391	photo diode module, such that the first elastic part
R5	USP5,337,396	and the second elastic part protect the laser diode
R6	USP5,340,340	module and the photo diode module from foreign
R7	USP5,345,524	matter when the module cap is removably attached
R8	USP5,345,530	to an optical module.
R9	USP5,353,364	
R10	USP5,353,634	
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	
R14	USP5,361,318	
R15	USP5,366,664	
R16	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S16 do not disclose, at least, a module
S2	USP5,383,793	cap comprising a first elastic part to protect a laser
S3	USP5,388,995	diode module and a second elastic part to protect a
S4	USP5,390,268	photo diode module, such that the first elastic part
S5	USP5,393,249	and the second elastic part protect the laser diode
S6	USP5,397,242	module and the photo diode module from foreign
S7	USP5,398,154	matter when the module cap is removably attached
S8	USP5,398,295	to an optical module.
S9	USP5,408,384	
S10	USP5,414,787	

S11	USP5,416,668	
S12	USP5,416,870	
S13	USP5,416,872	
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 through T4 do not disclose, at least, a module
T2	USP5,434,747	cap comprising a first elastic part to protect a laser
T3	USP5,443,390	diode module and a second elastic part to protect a
T4	USP5,446,814	photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T6	USP5,454,080	T6 through T9 do not disclose, at least, a module
T7	USP5,455,703	cap comprising a first elastic part to protect a laser
T8	USP5,463,532	diode module and a second elastic part to protect a
T9	USP5,469,332	photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
T10	USP5,470,257	These references do not qualify as prior art.
T11	USP5,470,259	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T12	USP5,475,734	T12 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
T13	USP5,477,418	These references do not qualify as prior art.
T14	USP5,478,253	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T15	USP5,478,259	T15 and T16 do not disclose, at least, a module cap

T16		comprising a first elastic part to protect a laser
		diode module and a second elastic part to protect a
		photo diode module, such that the first elastic part
	USP5,478,260	and the second elastic part protect the laser diode
		module and the photo diode module from foreign
		matter when the module cap is removably attached
		to an optical module.

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 through U4 do not disclose, at least, a module
U2	USP5,482,658	cap comprising a first elastic part to protect a laser
U3	USP5,487,678	diode module and a second elastic part to protect a
U4	USP5,491,613	photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
Ü6	USP5,494,747	U6 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

U10	USP5,506,921	U10 through U14 do not disclose, at least, a
U11	USP5,506,922	module cap comprising a first elastic part to protect
U12	USP5,507,668	a laser diode module and a second elastic part to
U13	USP5,526,235	protect a photo diode module, such that the first
U14	USP5,527,991	elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
U15	USP5,534,662	These references do not qualify as prior art.
U16	USP5,535,296	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode
		module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
V2	USP5,545,845	These references do not qualify as prior art.
V3	USP5,546,281	Applicants have claimed priority to Japanese
V4	USP5,547,385	Application No. 06-086691, filed on April 25, 1994, in Japan.
V5	USP5,548,641	V5 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V11 do not disclose, at least, a module
V8	USP5,554,037	cap comprising a first elastic part to protect a laser
V9	USP5,567,167	diode module and a second elastic part to protect a
V10	USP5,577,064	photo diode module, such that the first elastic part

V11	USP5,580,269	and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 through V15 do not disclose, at least, a
V14	USP5,599,595	module cap comprising a first elastic part to protect
V15	USP5,600,470	a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art.
W2	USP5,631,998	Applicants have claimed priority to Japanese
W3	USP5,653,596	Application No. 06-086691, filed on April 25, 1994, in Japan.
W4	USP5,659,459	W4 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
W5	USP5,675,428	These references do not qualify as prior art.
W6	USP5,687,267	Applicants have claimed priority to Japanese
W7	USP5,717,533	Application No. 06-086691, filed on April 25,
W8	USP5,724,729	] 1994, in Japan.
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	

TTT4 C   TIOD C 00 C 00 A	
W16 USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art.
X2	USP5,879,173	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.
X3	DE.4239124 A1	X3 through X21 do not disclose, at least, a module
X4	EP 0 232792 A1	cap comprising a first elastic part to protect a laser
X5	EP.0 228 278	diode module and a second elastic part to protect a
X6	EP.0 305112 A2	photo diode module, such that the first elastic part
X7	EP.0 314 651 A2	and the second elastic part protect the laser diode
X8	EP.0 413 489 A2	module and the photo diode module from foreign
X9	EP.0 437 161 A2	matter when the module cap is removably attached
X10	EP.0 456 298 B1	to an optical module.
X11	EP.0 530 791 A2	
X12	EP.0 535 473 A1	
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	
X16	EP.0 652 696 A1	
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	
X20	WO 94/12900	
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y19 do not disclose, at least, a module
Y2	JP.2-181710	cap comprising a first elastic part to protect a laser
Y3	JP.2-278212	diode module and a second elastic part to protect a
Y4	JP.2-87837	photo diode module, such that the first elastic part
Y5	JP.3-20458	and the second elastic part protect the laser diode
Y6	JP.3-94869	module and the photo diode module from foreign
Y7	JP.4-109593	matter when the module cap is removably attached
Y8	JP.4-122905	to an optical module.
Y9	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	
Y12	JP.4-229962	
Y13	JP.4-230978	
Y14	JP.4-234715	
Y15	JP.4-270305	

Y16	JP.4-50901	
Y17	JP.4-87809	
Y18	JP.5-052802	
Y19	JP.5-134147	

Ref	Title	Distinction between reference(s) and claim(s)
Zl	JP.5-152607	Z1 through Z19 do not disclose, at least, a module
Z2	JP.5-188250	cap comprising a first elastic part to protect a laser
Z3	JP.5-211379	diode module and a second elastic part to protect a
<b>Z</b> 4	JP.5-218581	photo diode module, such that the first elastic part
<b>Z</b> 5	JP.5-290913	and the second elastic part protect the laser diode
Z6	JP.5-70955	module and the photo diode module from foreign
<u>Z7</u>	JP.61-158046	matter when the module cap is removably attached
Z8	JP.61-188385	to an optical module.
<u>Z9</u>	JP.63-009325	
Z10	JP.63-16496	
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, a
AA2	U-63-16496	module cap comprising a first elastic part to protect
AA3	U-63-65967	a laser diode module and a second elastic part to
AA4	U-63-65978	protect a photo diode module, such that the first
AA5	U-63-82998	elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 through BB11 do not disclose, at least, a
BB2	Ronald LSoderstrom et al.,"An optical Date Link using a CD laser",SPIE Vol.1577 High Speed Fiber Networks and Channels,pp.163-173,1991	module cap comprising a first elastic part to protect a laser diode module and a second elastic part to
BB3	BCP,Inc."Gigabits Over Multimode Optical Fiber"no date	protect a photo diode module, such that the first elastic part and the second elastic part protect the
BB4	Ronald L.Soderstrom et al., "CD laser optical Date Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	laser diode module and the photo diode module

BB5	FDDI Low-Cost Fiber Phyiscal Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	from foreign matter when the module cap is removably attached to an optical module.
BB6	HP Module HFBR-5103, FDDI Data Sheet,http://www.hp.com/HP- COMP/fiber/hfbr5103.html,Jun.11,1998	
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System".www.patents.ibm.com/tdbs/tdb?ℴ=93A+60964,April 1993	
BB8	IBM, "A Proposal for a New High Performance "OptopElectronics Enterprise Oct.1992 ANS1 Meeting,Oct.13,1992	
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Sandards?" no date.	CC3 through CC11 do not disclose, at least, a
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	module cap comprising a first elastic part to protect a laser diode module and a second elastic part to
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	protect a photo diode module, such that the first
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	elastic part and the second elastic part protect the
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	removably attached to an optical module.
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454.definition of LED, Van Nostrand Reinhold Co.	
CC11	Edward R.Salmon, Encapsulation of Electronic Devices and Components, Marcel Deckker Inc., New York, 1987	

_			
	Ref	Title	Distinction between reference(s) and claim(s)

	Dieter Gwinner, Conducive Coatings: Vacuum
DD1	Evaporated Aluminum for Selective Shielding of
	Plastic Housings,no date.
DD2	HEADS UpSumitomo Electric Lightwave joins
DDZ	Other in Announcement, May 11,1995
	Robert C. Herron, High Density Input/Output
DD3	Connector Systems,3M Electronic Products
	Divisions, 1990
	Shortwave Opto Assembly, IBM OptoElectronic
DD4	Enterprises; IBM/OEE Market Survey Only,
	Rev.1,Jan.6,1993
	"Minimizing Electrostatic Discharge Damage to a
DD5	Cartridge", IBM Technical Disclosure Bulletin, vol. 29
	No. 10. Mar.,1987
	Japanese Standards Association " F04 Type
DD6	Connectors for Optical Fiber Cords JIS C
<u>.</u>	5973"Japanese Standards Association,1990.
	Ronald LSoderstrom et al., A Miniaturized Fiber Optic
DD7	Laser Receptacle Using a Compact Disk(CD)···
	FOC/LAN'87&MFOC-WEST,pp.383-385,no date.
	"Transceiver Module Assembly", IBM Technical
DD8	Disclosure
	Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb
	?o=79A+06370,last visited Mar.3,2005.
	Ronald L.Soderstrom et al., Optical Components and
DD9	Electronic Packaging for High Performance Optical
	Date Links, THE RESEARCH INVESTMENT, p. 19-
	28(no date).
DD10	Thomas & Betts INFO-LAN Modem 1998
DD11	"Active component manufacturers lower the cost of
וועטן	fiber to the desktop", Lightwave, Feb. 1994 pp. 58,67.

DD1 through DD11 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.

Ref	Title	
EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute, 1996.	
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber, Van Nostrand Reinhold Publishing, 1983	
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer date links", Fiber Optic Datacom and Computer Networks, SPIE-The International Society for Optical Engineerdings, Vol. 1577, pp. 174-181, 1988	
EE5	David A.Knodel et al.,"Open Fibre Control,a laser safety interlock technique", High-Speed Fiber Networks and Channels, SPIE-The International Society for Optical Engineering Proceedings, Vol. 991, pp. 179-182, 1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34, No.7B, Dec. 1991	
"High Reliability SW Laser For Optical Data L LEOS '93 Conference Proceedings, IEEE Laser Electro-Optics Society 1993 Annual Meeting;		
EE8	Minimizing Electrostatic Discharge to a Cartridge, IBM Technical Disclosure Bulletin, March 1987, https://www.delphion.com/tdb?o=87A%2060509 ,last visited Mar.8,2005.	

EE1 through EE11 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.

Distinction between reference(s) and claim(s)

EE9	K.P.Jackson et al.,"High-Density,Array,Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings,IEEE Computer Society Press.
	TDB:Stackable Circuit Card Packaging within a Logic Cage,IBM Technical Disclosure
EE10	Bulletin,Dec.1992,https://www.delphion.com/tbds/tdb?o=92A%2063485,last visited
EE11	Jeff Hechi, The Laser Guidebook, 2nd ed., McGraw Hill, Inc., 1992

## Claim Chart for Claims 163-165 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical
A2	USP2,899,669	module comprising a laser diode driver to covert
A3	USP3,264,601	serial data, which a serial connector transfers, into a
A4	USP3,332,860	laser diode electrical signal and to drive a laser
A5	USP3,474,380	diode according to the laser diode electrical signal,
A6	USP3,497,866	producing a laser diode optical signal such that the
A7	USP3,523,269	laser diode transmits the laser diode optical signal.
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module
	031 3,772,204	comprising a serial connector to transfer serial data.
A14		A14 does not disclose, at least, an optical module
		comprising a laser diode driver to covert serial data,
		which a serial connector transfers, into a laser diode
	USP3,805,116	electrical signal and to drive a laser diode according
		to the laser diode electrical signal, producing a laser
		diode optical signal such that the laser diode
		transmits the laser diode optical signal.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical
A16	USP3,976,877	module comprising a serial connector to transfer
	03: 3,710,677	serial data.

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical
B2	USP4,047,242	module comprising a laser diode driver to covert
B3		serial data, which a serial connector transfers, into a
		laser diode electrical signal and to drive a laser
	USP4,156,903	diode according to the laser diode electrical signal,
		producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
B4	USP4,161,650	B4 does not disclose, at least, an optical module
	USF4,101,030	comprising a serial connector to transfer serial data.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical
B6	USP4,176,897	module comprising a laser diode driver to covert
B7		serial data, which a serial connector transfers, into a
	USP4,217,019	laser diode electrical signal and to drive a laser
		diode according to the laser diode electrical signal,
		producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.

	<del></del>	T
B8	USP4,217,488	B8 does not disclose, at least, an optical module
	001 4,217,100	comprising a serial connector to transfer serial data.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical
B10		module comprising a laser diode driver to covert
		serial data, which a serial connector transfers, into a
	11004 024 060	laser diode electrical signal and to drive a laser
	USP4,234,968	diode according to the laser diode electrical signal,
		producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
B11	USP4,249,266	B11 through B13 do not disclose, at least, an
B12	USP4,252,402	optical module comprising a serial connector to
B13	USP4,257,124	transfer serial data.
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical
B15		module comprising a laser diode driver to covert
		serial data, which a serial connector transfers, into a
	11004 272 412	laser diode electrical signal and to drive a laser
	USP4,273,413	diode according to the laser diode electrical signal,
		producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
B16	11004.000.000	B16 does not disclose, at least, an optical module
	USP4,276,656	comprising a serial connector to transfer serial data.

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 does not disclose, at least, an optical module
	031 4,234,082	comprising a serial connector to transfer serial data.
C2		C2 does not disclose, at least, an optical module
		comprising a laser diode driver to covert serial data,
		which a serial connector transfers, into a laser diode
	USP4,295,181	electrical signal and to drive a laser diode according
		to the laser diode electrical signal, producing a laser
		diode optical signal such that the laser diode
		transmits the laser diode optical signal.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical
C4		module comprising a single circuit board, on which
		a serial connector and a laser diode electrical signal
	11004 220 970	converter are mounted and to which a laser diode
	USP4,330,870	and a photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
C5		C5 does not disclose, at least, an optical module
	USP4,345,808	comprising a laser diode driver to covert serial data,
		which a serial connector transfers, into a laser diode
		electrical signal and to drive a laser diode according
		to the laser diode electrical signal, producing a laser
		diode optical signal such that the laser diode

		transmits the laser diode optical signal.
C6		C6 does not disclose, at least, an optical module
		comprising a single circuit board, on which a serial
		connector and a laser diode electrical signal
	USP4,347,655	converter are mounted and to which a laser diode
		and a photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
C7	USP4,357,606	D7 does not disclose, at least, an optical module
	031 4,337,000	comprising a serial connector to transfer serial data.
C8		C8 does not disclose, at least, an optical module
		comprising a laser diode driver to covert serial data,
		which a serial connector transfers, into a laser diode
	USP4,360,248	electrical signal and to drive a laser diode according
		to the laser diode electrical signal, producing a laser
		diode optical signal such that the laser diode
		transmits the laser diode optical signal.
C9		C9 does not disclose, at least, an optical module
		comprising a single circuit board, on which a serial
		connector and a laser diode electrical signal
	USP4,366,565	converter are mounted and to which a laser diode
		and a photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
C10	USP4,369,494	C10 through C15 do not disclose, at least, an
C11	USP4,380,360	optical module comprising a laser diode driver to
C12	USP4,388,671	covert serial data, which a serial connector
C13	USP4,393,516	transfers, into a laser diode electrical signal and to
C14	USP4,398,073	drive a laser diode according to the laser diode
C15		electrical signal, producing a laser diode optical
ļ	USP4,398,780	signal such that the laser diode transmits the laser
		diode optical signal.
C16		C16 does not disclose, at least, an optical module
		comprising a single circuit board, on which a serial
		connector and a laser diode electrical signal
	USP4,399,563	converter are mounted and to which a laser diode
		and a photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according

		to the least diede electrical signal producing a least
		to the laser diode electrical signal, producing a laser
		diode optical signal such that the laser diode
	7707 4 422 000	transmits the laser diode optical signal.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical
D3	USP4,427,879	module comprising a serial connector to transfer
D4	USP4,430,699	serial data.
D5		D5 does not disclose, at least, an optical module
		comprising a laser diode driver to covert serial data,
		which a serial connector transfers, into a laser diode
	USP4,434,537	electrical signal and to drive a laser diode according
		to the laser diode electrical signal, producing a laser
		diode optical signal such that the laser diode
		transmits the laser diode optical signal.
D6	USP4,437,190	D6 does not disclose, at least, an optical module
	031 4,437,170	comprising a serial connector to transfer serial data.
D7		D7 does not disclose, at least, an optical module
		comprising a single circuit board, on which a serial
		connector and a laser diode electrical signal
	USP4,439,006	converter are mounted and to which a laser diode
ļ		and a photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical
D9	USP4,449,244	module comprising a serial connector to transfer
	031 4,447,244	serial data.
D10	USP4,449,784	D10 through D13 do not disclose, at least, an
D11	USP4,453,903	optical module comprising a laser diode driver to
D12	USP4,459,658	covert serial data, which a serial connector
D13		transfers, into a laser diode electrical signal and to
		drive a laser diode according to the laser diode
	USP4,461,537	electrical signal, producing a laser diode optical
		signal such that the laser diode transmits the laser
		diode optical signal.
D14	USP4,470,154	D14 does not disclose, at least, an optical module
	031 4,470,134	comprising a serial connector to transfer serial data.
D15		D15 does not disclose, at least, an optical module
		comprising a laser diode driver to covert serial data,
		which a serial connector transfers, into a laser diode
	USP4,486,059	electrical signal and to drive a laser diode according
		to the laser diode electrical signal, producing a laser
		diode optical signal such that the laser diode
		transmits the laser diode optical signal.
D16	HGD4 402 112	D16 does not disclose, at least, an optical module
	USP4,493,113	comprising a serial connector to transfer serial data.

Ref	Title	Distinction between reference(s) and claim(s)
E1		El does not disclose, at least, an optical module
		comprising a laser diode and a photo diode module
		which are electrically connected to a circuit board
	USP4,501,021	proximate to a first edge of the circuit board, and a
		serial connector to transfer serial data which is
		positioned proximate to and parallel with a second
		edge of the circuit board.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical
E3	USP4,505,035	module comprising a laser diode driver to covert
E4	USP4,506,937	serial data, which a serial connector transfers, into a
E5		laser diode electrical signal and to drive a laser
	USP4,510,553	diode according to the laser diode electrical signal,
	031 4,310,333	producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
E6		E6 does not disclose, at least, an optical module
		comprising a single circuit board, on which a serial
		connector and a laser diode electrical signal
	USP4,511,207	converter are mounted and to which a laser diode
		and a photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical
E8	USP4,516,204	module comprising a laser diode driver to covert
E9	USP4,519,670	serial data, which a serial connector transfers, into a
E10	USP4,519,672	laser diode electrical signal and to drive a laser
E11	USP4,519,673	diode according to the laser diode electrical signal,
E12	USP4,522,463	producing a laser diode optical signal such that the
E13	USP4,526,438	laser diode transmits the laser diode optical signal.
E14	USP4,526,986	
E15	USP4,527,286	E15 does not disclose, at least, an optical module
	1,521,500	comprising a serial connector to transfer serial data.
E16		E16 does not disclose, at least, an optical module
	USP4,529,266	comprising a laser diode driver to covert serial data,
		which a serial connector transfers, into a laser diode
		electrical signal and to drive a laser diode according
		to the laser diode electrical signal, producing a laser
		diode optical signal such that the laser diode
		transmits the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical
F2	USP4,531,810	module comprising a laser diode driver to covert

serial data, which a serial connector transfers, into a
laser diode electrical signal and to drive a laser
diode according to the laser diode electrical signal,
producing a laser diode optical signal such that the
laser diode transmits the laser diode optical signal.
F4 does not disclose, at least, an optical module
comprising a serial connector to transfer serial data.
F5 through F8 do not disclose, at least, an optical
module comprising a laser diode driver to covert
serial data, which a serial connector transfers, into a
laser diode electrical signal and to drive a laser
diode according to the laser diode electrical signal,
producing a laser diode optical signal such that the
laser diode transmits the laser diode optical signal.
F9 does not disclose, at least, an optical module
comprising a serial connector to transfer serial data.
F10 through F16 do not disclose, at least, an optical
module comprising a laser diode driver to covert
serial data, which a serial connector transfers, into a
laser diode electrical signal and to drive a laser
diode according to the laser diode electrical signal,
producing a laser diode optical signal such that the
laser diode transmits the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
G1		G1 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode
	USP4,544,234	electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode
		transmits the laser diode optical signal.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical
G3	USP4,545,077	module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical
G5	USP4,545,643	module comprising a laser diode driver to covert
G6	USP4,545,644	serial data, which a serial connector transfers, into a
G7	USP4,545,645	laser diode electrical signal and to drive a laser

G8		diode according to the laser diode electrical signal,
	USP4,548,465	producing a laser diode optical signal such that the
	, ,	laser diode transmits the laser diode optical signal.
G9	TIOD 4 540 466	G9 does not disclose, at least, an optical module
	USP4,548,466	comprising a serial connector to transfer serial data.
G10		G10 does not disclose, at least, an optical module
		comprising a laser diode driver to covert serial data,
		which a serial connector transfers, into a laser diode
1	USP4,548,467	electrical signal and to drive a laser diode according
		to the laser diode electrical signal, producing a laser
		diode optical signal such that the laser diode
		transmits the laser diode optical signal.
G11	USP4,549,782	G11 does not disclose, at least, an optical module
	USF 4,549,762	comprising a serial connector to transfer serial data.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an
G13	USP4,550,975	optical module comprising a laser diode driver to
G14		covert serial data, which a serial connector
		transfers, into a laser diode electrical signal and to
	USP4,553,811	drive a laser diode according to the laser diode
	031 4,333,611	electrical signal, producing a laser diode optical
		signal such that the laser diode transmits the laser
		diode optical signal.
G15	USP4,553,813	G15 does not disclose, at least, an optical module
	001 4,333,013	comprising a serial connector to transfer serial data.
G16		G16 does not disclose, at least, an optical module
	USP4,553,814	comprising a laser diode driver to covert serial data,
		which a serial connector transfers, into a laser diode
		electrical signal and to drive a laser diode according
		to the laser diode electrical signal, producing a laser
		diode optical signal such that the laser diode
		transmits the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical
H2	USP4,556,281	module comprising a laser diode driver to covert
H3	USP4,556,282	serial data, which a serial connector transfers, into a
H4	USP4,557,551	laser diode electrical signal and to drive a laser
H5	USP4,560,234	diode according to the laser diode electrical signal,
H6	USP4,563,057	producing a laser diode optical signal such that the
H7	USP4,566,753	laser diode transmits the laser diode optical signal.
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.

H12	USP4,580,872	H12 through H16 do not disclose, at least, an
H13	USP4,588,256	optical module comprising a laser diode driver to
H14	USP4,589,728	covert serial data, which a serial connector
H15	USP4,597,631	transfers, into a laser diode electrical signal and to
H16	USP4,614,836	drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module
I2		comprising a laser diode driver to covert serial data,
		which a serial connector transfers, into a laser diode
	USP4,634,239	electrical signal and to drive a laser diode according
	001 4,004,200	to the laser diode electrical signal, producing a laser
		diode optical signal such that the laser diode
		transmits the laser diode optical signal.
13		13 does not disclose, at least, an optical module
		comprising a single circuit board, on which a serial connector and a laser diode electrical signal
	USP4,641,371	converter are mounted and to which a laser diode
	0514,041,571	and a photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
<u>I4</u>	USP4,647,148	I4 through I16 do not disclose, at least, an optical
15	USP4,652,976	module comprising a laser diode driver to covert
I6	USP4,663,240	serial data, which a serial connector transfers, into a
I7_	USP4,663,603	laser diode electrical signal and to drive a laser
	USP4,678,264	diode according to the laser diode electrical signal,
<u>19</u>	USP4,679,883	producing a laser diode optical signal such that the
I10	USP4,695,106	laser diode transmits the laser diode optical signal.
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	_
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical
J2	USP4,762,388	module comprising a laser diode driver to covert
J3	USP4,767,179	serial data, which a serial connector transfers, into a
J4	USP4,772,931	laser diode electrical signal and to drive a laser
J5	USP4,779,952	diode according to the laser diode electrical signal,

J6	USP4,789,218	producing a laser diode optical signal such that the
J7	USP4,798,430	laser diode transmits the laser diode optical signal.
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
K2	USP4,844,581	K2 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
_K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical
K4	USP4,847,771	module comprising a laser diode driver to covert
K5	USP4,849,944	serial data, which a serial connector transfers, into a
K6	USP4,857,002	laser diode electrical signal and to drive a laser
K7	USP4,862,327	diode according to the laser diode electrical signal,
K8	USP4,872,212	producing a laser diode optical signal such that the
K9	USP4,872,736	laser diode transmits the laser diode optical signal.
K10	USP4,881,789	K10 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
K11	USP4,884,336	K11 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
K12	USP4,897,711	K12 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an
K14	USP4,927,225	optical module comprising a laser diode driver to
K15	USP4,944,568	covert serial data, which a serial connector

K16		transfers, into a laser diode electrical signal and to
		drive a laser diode according to the laser diode
I	JSP4,945,448	electrical signal, producing a laser diode optical
	,	signal such that the laser diode transmits the laser
		diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical
L2	USP4,955,817	module comprising a laser diode driver to covert
L3	USP4,963,104	serial data, which a serial connector transfers, into a
L4		laser diode electrical signal and to drive a laser
	USP4,967,312	diode according to the laser diode electrical signal,
	031 4,907,312	producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
L5	USP4,977,329	L5 does not disclose, at least, an optical module
	US1 4,777,327	comprising a serial connector to transfer serial data.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical
L7		module comprising a laser diode driver to covert
	USP4,979,794	serial data, which a serial connector transfers, into a
		laser diode electrical signal and to drive a laser
		diode according to the laser diode electrical signal,
		producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical
L9	USP4,989,934	module comprising a serial connector to transfer
		serial data.
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical
L11	USP4,991,062	module comprising a laser diode driver to covert
L12	USP5,002,495	serial data, which a serial connector transfers, into a
L13	USP5,004,434	laser diode electrical signal and to drive a laser
L14	USP5,006,286	diode according to the laser diode electrical signal,
L15	USP5,011,425	producing a laser diode optical signal such that the
L16	USP5,029,254	laser diode transmits the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical
M2	USP5,035,641	module comprising a laser diode driver to covert
M3	USP5,040,993	serial data, which a serial connector transfers, into a
M4	USP5,041,025	laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.

M6	USP5,044,982	M6 through M14 do not disclose, at least, an
M7	USP5,045,635	optical module comprising a laser diode driver to
M8	USP5,045,971	covert serial data, which a serial connector
M9	USP5,046,955	transfers, into a laser diode electrical signal and to
M10	USP5,060,373	drive a laser diode according to the laser diode
M11	USP5,071,219	electrical signal, producing a laser diode optical
M12	USP5,076,656	signal such that the laser diode transmits the laser
M13	USP5,076,688	diode optical signal.
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
N1		N1 does not disclose, at least, an optical module
		comprising a laser diode driver to covert serial
		data, which a serial connector transfers, into a laser
	USP5,091,991	diode electrical signal and to drive a laser diode
		according to the laser diode electrical signal,
		producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
N2	USP5,093,879	N2 does not disclose, at least, an optical module
	031 3,093,879	comprising a serial connector to transfer serial data.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical
N4	USP5,101,463	module comprising a laser diode driver to covert
N5	USP5,104,243	serial data, which a serial connector transfers, into a
N6	USP5,107,404	laser diode electrical signal and to drive a laser
N7	USP5,108,294	diode according to the laser diode electrical signal,
N8	USP5,109,453	producing a laser diode optical signal such that the
	031 3,107,433	laser diode transmits the laser diode optical signal.
N9	USP5,113,467	N9 does not disclose, at least, an optical module
		comprising a serial connector to transfer serial data.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an
N11	USP5,117,476	optical module comprising a laser diode driver to
N12	USP5,118,362	covert serial data, which a serial connector
N13	USP5,118,904	transfers, into a laser diode electrical signal and to

N14	USP5,120,578	drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
N15	USP5,122,893	N15 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical
N17	USP5,125,849	module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
N19	USP5,132,871	N19 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
01	USP5,134,677	O1 through O3 do not disclose, at least, an optical
O2	USP5,134,679	module comprising a laser diode driver to covert
O3	USP5,136,063	serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical
O5	USP5,136,603	module comprising a serial connector to transfer serial data.
06	USP5,138,537	O6 through O8 do not disclose, at least, an optical
07	USP5,138,678	module comprising a laser diode driver to covert
O8	USP5,140,663	serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
09	USP5,155,786	O9 and O10 do not disclose, at least, an optical
O10	USP5,157,769	module comprising a serial connector to transfer serial data.
O11	USP5,167,139	O11 does not disclose, at least, an optical module comprising a laser diode driver to covert serial

		data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
O12	USP5,168,537	O12 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an
O14	USP5,171,167	optical module comprising a laser diode driver to
O15	USP5,173,059	covert serial data, which a serial connector
016	USP5,183,404	transfers, into a laser diode electrical signal and to
O17	USP5,183,405	drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical
P2	USP5,202,536	module comprising a laser diode driver to covert
P3	USP5,207,597	serial data, which a serial connector transfers, into a
P4		laser diode electrical signal and to drive a laser
	USP5,212,752	diode according to the laser diode electrical signal,
	031 3,212,732	producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
P5	USP5,212,754	P5 does not disclose, at least, an optical module
	051 5,212,754	comprising a serial connector to transfer serial data.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical
P7	USP5,225,760	module comprising a laser diode driver to covert
P8	USP5,233,676	serial data, which a serial connector transfers, into a
P9	USP5,233,674	laser diode electrical signal and to drive a laser
P10	USP5,234,353	diode according to the laser diode electrical signal,
P11	USP5,238,426	producing a laser diode optical signal such that the
	051 5,250,420	laser diode transmits the laser diode optical signal.
P12	<sup>12</sup> USP5,241,614	P12 does not disclose, at least, an optical module
	0010,211,011	comprising a serial connector to transfer serial data.
P13		P13 does not disclose, at least, an optical module
		comprising a single circuit board, on which a serial
		connector and a laser diode electrical signal
	USP5,247,532	converter are mounted and to which a laser diode
		and a photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical
P15	USP5,259,054	module comprising a laser diode driver to covert

P16	USP5,262,923	serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
P17	USP5,271,079	P17 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.

Ref	Title	Distinction between reference(s) and claim(s)
Q1		Q1 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser
	USP5,274,729	diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
Q2	USP5,285,466	Q2 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
Q3	USP5,285,511	Q3 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
Q4	USP5,285,512	Q4 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an optical
Q6	USP5,286,247	module comprising a laser diode driver to covert
Q7	USP5,288,247	serial data, which a serial connector transfers, into a
Q8	USP5,289,347	laser diode electrical signal and to drive a laser
Q9	USP5,296,813	diode according to the laser diode electrical signal,
Q10	USP5,299,089	producing a laser diode optical signal such that the
Q11	USP5,304,069	laser diode transmits the laser diode optical signal.
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical
R2	USP5,333,221	module comprising a laser diode driver to covert

R3		serial data, which a serial connector transfers, into
K3		a laser diode electrical signal and to drive a laser
	11005 222 225	
	USP5,333,225	diode according to the laser diode electrical signal,
		producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
R4	USP5,337,391	R4 does not disclose, at least, an optical module
		comprising a serial connector to transfer serial data.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical
R6		module comprising a laser diode driver to covert
		serial data, which a serial connector transfers, into
	LIGDS 240 240	a laser diode electrical signal and to drive a laser
	USP5,340,340	diode according to the laser diode electrical signal,
		producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical
R8		module comprising a serial connector to transfer
100	USP5,345,530	serial data.
R9		R9 does not disclose, at least, an optical module
		comprising a single circuit board, on which a serial
		connector and a laser diode electrical signal
	USP5,353,364	converter are mounted and to which a laser diode
	0313,333,304	
		and a photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an
R11	USP5,356,300	optical module comprising a laser diode driver to
R12		covert serial data, which a serial connector
		transfers, into a laser diode electrical signal and to
	USP5,357,402	drive a laser diode according to the laser diode
	051 5,557,402	electrical signal, producing a laser diode optical
		signal such that the laser diode transmits the laser
		diode optical signal.
R13	USP5,361,244	R13 does not disclose, at least, an optical module
	051 3,301,244	comprising a serial connector to transfer serial data.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an
R15	USP5,366,664	optical module comprising a laser diode driver to
R16		covert serial data, which a serial connector
		transfers, into a laser diode electrical signal and to
	11005 050 515	drive a laser diode according to the laser diode
	USP5,372,515	electrical signal, producing a laser diode optical
		signal such that the laser diode transmits the laser
		diode optical signal.
	<u> </u>	diode option signal.

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical

S2	USP5,383,793	module comprising a laser diode driver to covert
$\frac{52}{S3}$	USP5,388,995	serial data, which a serial connector transfers, into
S4	USP5,390,268	a laser diode electrical signal and to drive a laser
S5	USP5,393,249	diode according to the laser diode electrical signal,
S6	USP5,397,242	producing a laser diode optical signal such that the
S7	USP5,398,154	laser diode transmits the laser diode optical signal.
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	S10 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
S11	USP5,416,668	S11 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical
S14	USP5,419,717	module comprising a laser diode driver to covert
S15	USP5,424,573	serial data, which a serial connector transfers, into
S16	USP5,428,703	a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 does not disclose, at least, an optical module
	051 5,428,704	comprising a serial connector to transfer serial data.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical
T3		module comprising a laser diode driver to covert
		serial data, which a serial connector transfers, into
	LIGDS 442 200	a laser diode electrical signal and to drive a laser
	USP5,443,390	diode according to the laser diode electrical signal,
		producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
T4	USP5,446,814	T4 does not disclose, at least, an optical module
		comprising a serial connector to transfer serial data.
T5		This reference does not qualify as prior art.
	USP5,452,387	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.
T6	USP5,454,080	T6 does not disclose, at least, an optical module
		comprising a laser diode driver to covert serial

		data, which a serial connector transfers, into a laser
		diode electrical signal and to drive a laser diode
		according to the laser diode electrical signal,
		producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
T7	LIODS 455 702	T7 does not disclose, at least, an optical module
	USP5,455,703	comprising a serial connector to transfer serial data.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical
T9		module comprising a laser diode driver to covert
		serial data, which a serial connector transfers, into
	770D 5 460 000	a laser diode electrical signal and to drive a laser
	USP5,469,332	diode according to the laser diode electrical signal,
		producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
T10	USP5,470,257	These references do not qualify as prior art.
T11	0013,170,237	Applicants have claimed priority to Japanese
111	USP5,470,259	Application No. 06-086691, filed on April 25,
	031 3,470,237	1994, in Japan.
T12		T12 does not disclose, at least, an optical module
112		comprising a laser diode driver to covert serial
		data, which a serial connector transfers, into a laser
	11005 475 724	diode electrical signal and to drive a laser diode
	USP5,475,734	1
		according to the laser diode electrical signal,
		producing a laser diode optical signal such that the
T1.0	11005 455 440	laser diode transmits the laser diode optical signal.
T13	USP5,477,418	These references do not qualify as prior art.
T14		Applicants have claimed priority to Japanese
	USP5,478,253	Application No. 06-086691, filed on April 25,
		1994, in Japan.
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical
T16		1 - 1
	LICDS 479 260	serial data, which a serial connector transfers, into
		a laser diode electrical signal and to drive a laser
	USF3,4/8,200	diode according to the laser diode electrical signal,
		producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
T16	USP5,478,260	module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the

Ref	Title	Distinction between reference(s) and claim(s)
U1		U1 does not disclose, at least, an optical module
		comprising a laser diode driver to covert serial
		data, which a serial connector transfers, into a laser
	USP5,481,634	diode electrical signal and to drive a laser diode
		according to the laser diode electrical signal,
		producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.

U2		U2 does not disclose, at least, an optical module
02	USP5,482,658	comprising a serial connector to transfer serial data.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical
U4	USP5,491,613	module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an
U12	USP5,507,668	optical module comprising a laser diode driver to
U13	USP5,526,235	covert serial data, which a serial connector
U14	USP5,527,991	transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
U15	USP5,534,662	These references do not qualify as prior art.
U16	USP5,535,296	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
V1		V1 does not disclose, at least, an optical module
` ^		comprising a laser diode driver to covert serial
		data, which a serial connector transfers, into a laser
	USP5,535,364	diode electrical signal and to drive a laser diode
		according to the laser diode electrical signal,
		producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
V2	USP5,545,845	These references do not qualify as prior art.
V3	USP5,546,281	Applicants have claimed priority to Japanese
V4		Application No. 06-086691, filed on April 25,
••	USP5,547,385	1994, in Japan.
V5		V5 does not disclose, at least, an optical module
,,,		comprising a laser diode driver to covert serial
		data, which a serial connector transfers, into a laser
	USP5,548,641	diode electrical signal and to drive a laser diode
		according to the laser diode electrical signal,
		producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
V6		This reference does not qualify as prior art.
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Applicants have claimed priority to Japanese
	USP5,548,677	Application No. 06-086691, filed on April 25,
		1994, in Japan.
V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical
V8	USP5,554,037	module comprising a laser diode driver to covert
V9		serial data, which a serial connector transfers, into
		a laser diode electrical signal and to drive a laser
	USP5,567,167	diode according to the laser diode electrical signal,
Ì		producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
V10	USP5,577,064	V10 does not disclose, at least, an optical module
	031 3,3 / 7,004	comprising a serial connector to transfer serial data.
V11		V11 does not disclose, at least, an optical module
		comprising a laser diode driver to covert serial
		data, which a serial connector transfers, into a laser
	USP5,580,269	diode electrical signal and to drive a laser diode
		according to the laser diode electrical signal,
		producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
V12		This reference does not qualify as prior art.
	USP5,588,850	Applicants have claimed priority to Japanese
	031 3,300,030	Application No. 06-086691, filed on April 25,
		1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical

V14	USP5,599,595	module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art.
W2	USP5,631,998	Applicants have claimed priority to Japanese
W3	USP5,653,596	Application No. 06-086691, filed on April 25,
77.4		1994, in Japan.
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
W5	USP5,675,428	These references do not qualify as prior art.
W6	USP5,687,267	Applicants have claimed priority to Japanese
W7	USP5,717,533	Application No. 06-086691, filed on April 25,
W8	USP5,724,729	] 1994, in Japan.
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art.
X2	USP5,879,173	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical

X4	EP 0 232792 A1	module comprising a laser diode driver to covert
X5	EP.0 228 278	serial data, which a serial connector transfers, into
X6	22.0 22.0 2.0	a laser diode electrical signal and to drive a laser
Au		diode according to the laser diode electrical signal,
	EP.0 305112 A2	producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical
X8	E1.0 314 031 A2	module comprising a serial connector to transfer
Ao	EP.0 413 489 A2	serial data.
V0		
X9		X9 does not disclose, at least, an optical module
		comprising a laser diode driver to covert serial
	TD 0 407 161 40	data, which a serial connector transfers, into a laser
	EP.0 437 161 A2	diode electrical signal and to drive a laser diode
		according to the laser diode electrical signal,
		producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
X10	EP.0 456 298 B1	X10 does not disclose, at least, an optical module
	B1.0 100 250 B1	comprising a serial connector to transfer serial data.
X11		X11 does not disclose, at least, an optical module
		comprising a laser diode driver to covert serial
		data, which a serial connector transfers, into a laser
	EP.0 530 791 A2	diode electrical signal and to drive a laser diode
		according to the laser diode electrical signal,
		producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an
X13	EP.0 588 014 A2	optical module comprising a serial connector to
X14	EP.0 600 645 A1	transfer serial data.
X15		X15 does not disclose, at least, an optical module
		comprising a single circuit board, on which a serial
		connector and a laser diode electrical signal
	EP.0 613 032 A2	converter are mounted and to which a laser diode
		and a photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an
X17	EP.0 656 696 A1	optical module comprising a laser diode driver to
X18		covert serial data, which a serial connector
		transfers, into a laser diode electrical signal and to
		drive a laser diode according to the laser diode
	EP.0 662 259 B1	electrical signal, producing a laser diode optical
		signal such that the laser diode transmits the laser
		diode optical signal.
X19		X19 does not disclose, at least, an optical module
1 17	EP.442 608 A2	comprising a serial connector to transfer serial data.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical
A20	W U 94/12900	AZU anu AZI uu not uisciose, at least, an optical

JP.1-237783	module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal,
	producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
<u>Y1</u>	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical
Y2	JP.2-181710	module comprising a serial connector to transfer
Y3	JP.2-278212	serial data.
Y4	JP.2-87837	
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical
Y6	JP.3-94869	module comprising a laser diode driver to covert
Y7		serial data, which a serial connector transfers, into
		a laser diode electrical signal and to drive a laser
	JP.4-109593	diode according to the laser diode electrical signal,
		producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical
Y9	JP.4-165312	module comprising a serial connector to transfer
Y10	JP.4-211208	serial data.
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an
Y12	JP.4-229962	optical module comprising a laser diode driver to
Y13		covert serial data, which a serial connector
		transfers, into a laser diode electrical signal and to
	JP.4-230978	drive a laser diode according to the laser diode
	31.4-230978	electrical signal, producing a laser diode optical
		signal such that the laser diode transmits the laser
		diode optical signal.
Y14	JP.4-234715	Y14 do not disclose, at least, an optical module
		comprising a serial connector to transfer serial data.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an
Y16	JP.4-50901	optical module comprising a laser diode driver to
Y17	JP.4-87809	covert serial data, which a serial connector
Y18		transfers, into a laser diode electrical signal and to
		drive a laser diode according to the laser diode
	JP.5-052802	electrical signal, producing a laser diode optical
		signal such that the laser diode transmits the laser
		diode optical signal.
Y19	JP.5-134147	Y19 does not disclose, at least, an optical module
L		comprising a serial connector to transfer serial data.

Ref	Title	Distinction between reference(s) and claim(s)
1141		

Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical
$\overline{Z2}$		module comprising a serial connector to transfer
22	JP.5-188250	serial data.
Z3		Z3 does not disclose, at least, an optical module
		comprising a laser diode driver to covert serial
		data, which a serial connector transfers, into a laser
	JP.5-211379	diode electrical signal and to drive a laser diode
		according to the laser diode electrical signal,
		producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
Z4	TD 5 010501	Z4 does not disclose, at least, an optical module
	JP.5-218581	comprising a serial connector to transfer serial data.
Z5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical
Z6	JP.5-70955	module comprising a laser diode driver to covert
<b>Z</b> 7	JP.61-158046	serial data, which a serial connector transfers, into
Z8		a laser diode electrical signal and to drive a laser
	JP.61-188385	diode according to the laser diode electrical signal,
	JP.01-100303	producing a laser diode optical signal such that the
		laser diode transmits the laser diode optical signal.
<b>Z</b> 9		Z9 does not disclose, at least, an optical module
		comprising a single circuit board, on which a serial
1		connector and a laser diode electrical signal
	JP.63-009325	converter are mounted and to which a laser diode
		and a photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an
Z11	JP.63-65967	optical module comprising a laser diode driver to
Z12	JP.63-65978	covert serial data, which a serial connector
Z13	JP.63-82998	transfers, into a laser diode electrical signal and to
Z14	U-3-20458	drive a laser diode according to the laser diode
Z15	U-3-94869	electrical signal, producing a laser diode optical
Z16	U-4-87809	signal such that the laser diode transmits the laser
<u>Z17</u>	U-5-052802	diode optical signal.
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an
AA2	U-63-16496	optical module comprising a laser diode driver to
AA3	U-63-65967	covert serial data, which a serial connector
AA4	U-63-65978	transfers, into a laser diode electrical signal and to

AA5	U-63-82998	drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
-----	------------	--

Ref	Title	Distinction between reference(s) and claim(s)
BB1	1100	BB1 does not disclose, at least, an optical module
	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
BB2	Ronald LSoderstrom et al.,"An optical Date Link using a CD laser", SPIE Vol.1577 High Speed Fiber Networks and Channels, pp. 163-173, 1991	BB2 through BB4 do not disclose, at least, an optical module comprising a serial connector to
BB3	BCP,Inc."Gigabits Over Multimode Optical Fiber"no date	transfer serial data.
BB4	Ronald L.Soderstrom et al., "CD laser optical Date Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	
BB5	FDDI Low-Cost Fiber Phyiscal Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	BB5 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
BB6	HP Module HFBR-5103, FDDI Data Sheet,http://www.hp.com/HP- COMP/fiber/hfbr5103.html,Jun.11,1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode driver to covert
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System".www.patents.ibm.com/tdbs/tdb?ℴ=93A +60964,April 1993	serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
BB8	IBM, "A Proposal for a New High Performance "OptopElectronics Enterprise Oct.1992 ANSI Meeting,Oct.13,1992	BB8 and BB9 do not disclose, at least, an optical module comprising a serial connector to transfer
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	serial data.
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	BB10 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	BB11 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Sandards?" no date.	CC3 through CC5 do not disclose, at least, an
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991 AMP Inc. "Lytel Molded-Optronic SC Duplex	optical module comprising a serial connector to transfer serial data.
CCS	Transceiver" Catalog 65922,Dec.1993.	
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	CC7 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	CC8 and CC9 do not disclose, at least, an optical module comprising a laser diode driver to covert
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454. definition of LED, Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
CC11	Edward R.Salmon, Encapsulation of Electronic Devices and Components, Marcel Deckker Inc., New York, 1987	CC11 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.

-		<del>, _ , _ , _ , _ , _ , _ , _ , _ , _ , _</del>
Ref	Title	Distinction between reference(s) and claim(s)

DD1 DD2 DD3	Dieter Gwinner, Conducive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.  HEADS UpSumitomo Electric Lightwave joins Other in Announcement, May 11,1995  Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990  Shortwave Opto Assembly, IBM OptoElectronic	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
DD4	Enterprises; IBM/OEE Market Survey Only, Rev.1,Jan.6,1993	DD4 and DD5 do not disclose, at least, an optical module comprising a serial connector to transfer
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	serial data.
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.	DD6 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
DD7	Ronald LSoderstrom et al., A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD)  FOC/LAN'87&MFOC-WEST,pp.383-385,no date.	DD7 through DD9 do not disclose, at least, an optical module comprising a serial connector to
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	transfer serial data.
DD9	Ronald L.Soderstrom et al., Optical Components and Electronic Packaging for High Performance Optical Date Links, THE RESEARCH INVESTMENT, p. 19- 28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute, 1996.	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode driver to

EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	covert serial data, which a serial connector transfers, into a laser diode electrical signal and to
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	drive a laser diode according to the laser diode electrical signal, producing a laser diode optical
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer date links", Fiber Optic Datacom and Computer Networks, SPIE-The International Society for Optical Engineerdings, Vol. 1577, pp. 174-181, 1988	signal such that the laser diode transmits the laser diode optical signal.
EE5	David A.Knodel et al.,"Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34, No.7B, Dec.1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge, IBM Technical Disclosure Bulletin, March 1987, https://www.delphion.com/tdb?o=87A%2060509 ,last visited Mar. 8, 2005.	
EE9	K.P.Jackson et al., "High-Density, Array, Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings, IEEE Computer Society Press.	
EE10	TDB:Stackable Circuit Card Packaging within a Logic Cage,IBM Technical Disclosure Bulletin,Dec.1992,https://www.delphion.com/tbds/tdb?o=92A%2063485,last visited Mar.8,2005	
EE11	Jeff Hechi, The Laser Guidebook, 2nd ed., McGraw Hill, Inc., 1992	

## Claim Chart for Claims 166-168 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical
A2	USP2,899,669	module comprising a laser diode module
A3	USP3,264,601	comprising a laser diode to produce and transmit a
A4	USP3,332,860	laser diode optical signal based on a laser diode
A5	USP3,474,380	electrical signal.
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
A14	USP3,805,116	A14 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical
A16	USP3,976,877	module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical
B2	USP4,047,242	module comprising a laser diode module
B3		comprising a laser diode to produce and transmit a
	USP4,156,903	laser diode optical signal based on a laser diode
-		electrical signal.
B4		B4 does not disclose, at least, an optical module
	USP4,161,650	comprising a laser diode electrical signal converter
		to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical
B6	USP4,176,897	module comprising a laser diode module
B7		comprising a laser diode to produce and transmit a
	USP4,217,019	laser diode optical signal based on a laser diode
		electrical signal.
B8	USP4,217,488	B8 does not disclose, at least, an optical module

B9	USP4,226,491	comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.  B9 and B10 do not disclose, at least, an optical
B10	USP4,234,968	module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
B11	USP4,249,266	B11 through B13 do not disclose, at least, an
B12	USP4,252,402	optical module comprising a laser diode electrical
B13	USP4,257,124	signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical
B15	USP4,273,413	module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
B16	USP4,276,656	B16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
C2	USP4,295,181	C2 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical
C4	USP4,330,870	module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
C5	USP4,345,808	C5 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
C6	USP4,347,655	C6 does not disclose, at least, an optical module comprising a single circuit board, on which a serial

	<del></del>	<del></del>
		connector and a laser diode electrical signal
		converter are mounted and to which a laser diode
		and a photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
C7		C7 does not disclose, at least, an optical module
	USP4,357,606	comprising a laser diode electrical signal converter
	0364,337,000	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
C8		C8 does not disclose, at least, an optical module
	USP4,360,248	comprising a laser diode module comprising a laser
	USP4,360,248	diode to produce and transmit a laser diode optical
		signal based on a laser diode electrical signal.
C9		C9 does not disclose, at least, an optical module
		comprising a single circuit board, on which a serial
		connector and a laser diode electrical signal
	USP4,366,565	converter are mounted and to which a laser diode
		and a photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
C10	USP4,369,494	C10 through C15 do not disclose, at least, an
C11	USP4,380,360	optical module comprising a laser diode module
C12	USP4,388,671	comprising a laser diode to produce and transmit a
C13	USP4,393,516	laser diode optical signal based on a laser diode
C14	USP4,398,073	electrical signal.
C15	USP4,398,780	]
C16		C16 does not disclose, at least, an optical module
		comprising a single circuit board, on which a serial
	USP4,399,563	connector and a laser diode electrical signal
		converter are mounted and to which a laser diode
		and a photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical
D3	USP4,427,879	module comprising a laser diode electrical signal
D4	USP4,430,699	converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
D5	USP4,434,537	D5 does not disclose, at least, an optical module

		comprising a laser diode module comprising a laser
1		diode to produce and transmit a laser diode optical
		signal based on a laser diode electrical signal.
D6		D6 does not disclose, at least, an optical module
	USP4,437,190	comprising a laser diode electrical signal converter
	0314,437,190	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
D7		D7 does not disclose, at least, an optical module
		comprising a single circuit board, on which a serial
		connector and a laser diode electrical signal
	USP4,439,006	converter are mounted and to which a laser diode
ļ		and a photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical
D9		module comprising a laser diode electrical signal
	11004 440 244	converter to convert serial data, which a serial
	USP4,449,244	connector transfers, into a laser diode electrical
		signal.
D10	USP4,449,784	D10 through D13 do not disclose, at least, an
D11	USP4,453,903	optical module comprising a laser diode module
D12	USP4,459,658	comprising a laser diode to produce and transmit a
D13		laser diode optical signal based on a laser diode
	USP4,461,537	electrical signal.
D14		D14 does not disclose, at least, an optical module
	USP4,470,154	comprising a laser diode electrical signal converter
		to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
D15		D15 does not disclose, at least, an optical module
	HIGDA 406 050	comprising a laser diode module comprising a laser
	USP4,486,059	diode to produce and transmit a laser diode optical
		signal based on a laser diode electrical signal.
D16		D16 does not disclose, at least, an optical module
}	11004 402 112	comprising a laser diode electrical signal converter
	USP4,493,113	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
	<u> </u>	in the state of th

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical
E3	USP4,505,035	module comprising a laser diode module
E4	USP4,506,937	comprising a laser diode to produce and transmit a

E5	USP4,510,553	laser diode optical signal based on a laser diode electrical signal.
E6	USP4,511,207	E6 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical
E8	USP4,516,204	module comprising a laser diode module
E9	USP4,519,670	comprising a laser diode to produce and transmit a
E10	USP4,519,672	laser diode optical signal based on a laser diode
E11	USP4,519,673	electrical signal.
E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	E15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
E16	USP4,529,266	E16 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical
F2	USP4,531,810	module comprising a laser diode module
F3	USP4,533,208	comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
F4	USP4,533,209	F4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical
F6	USP45,34,617	module comprising a laser diode module
F7	USP4,535,233	comprising a laser diode to produce and transmit a
F8	USP4,537,468	laser diode optical signal based on a laser diode electrical signal.
F9	USP4,539,476	F9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical
F11	USP4,540,246	module comprising a laser diode module
F12	USP4,541,036	comprising a laser diode to produce and transmit a
F13	USP4,541,685	laser diode optical signal based on a laser diode
F14	USP4,542,076	electrical signal.
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1		G1 does not disclose, at least, an optical module
		comprising a laser diode module comprising a laser
		diode to produce and transmit a laser diode optical
		signal based on a laser diode electrical signal.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical
G3		module comprising a single circuit board, on which
İ		a serial connector and a laser diode electrical signal
	USP4,545,077	converter are mounted and to which a laser diode
	031 4,343,077	and a photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical
G5	USP4,545,643	module comprising a laser diode module
G6	USP4,545,644	comprising a laser diode to produce and transmit a
G7	USP4,545,645	laser diode optical signal based on a laser diode
G8	USP4,548,465	electrical signal.
G9		G9 does not disclose, at least, an optical module
	USP4,548,466	comprising a laser diode electrical signal converter
	031 4,348,400	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
G10		G10 does not disclose, at least, an optical module
	USP4,548,467	comprising a laser diode module comprising a laser
	031 4,348,407	diode to produce and transmit a laser diode optical
		signal based on a laser diode electrical signal.
G11		G11 does not disclose, at least, an optical module
-	USP4,549,782	comprising a laser diode electrical signal converter
	031 4,349,762	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
G12	USP4,549,783	G12 through G14 doe not disclose, at least, an
G13	USP4,550,975	optical module comprising a laser diode module
G14	USP4,553,811	comprising a laser diode to produce and transmit a
		laser diode optical signal based on a laser diode
		electrical signal.
G15		G15 does not disclose, at least, an optical module
	USP4,553,813	comprising a laser diode electrical signal converter
		to convert serial data, which a serial connector

	transfers, into a laser diode electrical signal.
G16 USP4,553,814	G16 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical
H2	USP4,556,281	module comprising a laser diode module
Н3	USP4,556,282	comprising a laser diode to produce and transmit a
H4	USP4,557,551	laser diode optical signal based on a laser diode
H5	USP4,560,234	electrical signal.
H6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
Н9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an
H13	USP4,588,256	optical module comprising a laser diode module
H14	USP4,589,728	comprising a laser diode to produce and transmit a
H15	USP4,597,631	laser diode optical signal based on a laser diode
H16	USP4,614,836	electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module
I2	USP4,634,239	comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
I3	USP4,641,371	I3 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
I4	USP4,647,148	I4 through I16 do not disclose, at least, an optical
I5	USP4,652,976	module comprising a laser diode module
I6	USP4,663,240	comprising a laser diode to produce and transmit a
<u>I7</u>	USP4,663,603	laser diode optical signal based on a laser diode

I8	USP4,678,264	electrical signal.
<u>19</u>	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical
J2	USP4,762,388	module comprising a laser diode module
J3	USP4,767,179	comprising a laser diode to produce and transmit a
J4	USP4,772,931	laser diode optical signal based on a laser diode
J5	USP4,779,952	electrical signal.
J6	USP4,789,218	
J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
K2	USP4,844,581	K2 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.

K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical
K4	USP4,847,771	module comprising a laser diode module
K5	USP4,849,944	comprising a laser diode to produce and transmit a
K6	USP4,857,002	laser diode optical signal based on a laser diode
K7	USP4,862,327	electrical signal.
K8	USP4,872,212	
K9	USP4,872,736	
K10		K10 does not disclose, at least, an optical module
	USP4,881,789	comprising a laser diode electrical signal converter
	USF4,661,769	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
K11		K11 does not disclose, at least, an optical module
-	USP4,884,336	comprising a laser diode module comprising a laser
	USF4,864,330	diode to produce and transmit a laser diode optical
ļ		signal based on a laser diode electrical signal.
K12		K12 does not disclose, at least, an optical module
	USP4,897,711	comprising a laser diode electrical signal converter
ŀ	0364,697,711	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an
K14	USP4,927,225	optical module comprising a laser diode module
K15	USP4,944,568	comprising a laser diode to produce and transmit a
K16	LISDA 045 449	laser diode optical signal based on a laser diode
	USP4,945,448	electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical
L2	USP4,955,817	module comprising a laser diode module
L3	USP4,963,104	comprising a laser diode to produce and transmit a
L4	USP4,967,312	laser diode optical signal based on a laser diode electrical signal.
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical
L7	USP4,979,794	module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical
L9	USP4,989,934	module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical
L11	USP4,991,062	module comprising a laser diode module
L12	USP5,002,495	comprising a laser diode to produce and transmit a
L13	USP5,004,434	laser diode optical signal based on a laser diode
L14	USP5,006,286	electrical signal.
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical
M2	USP5,035,641	module comprising a laser diode module
M3	USP5,040,993	comprising a laser diode to produce and transmit a
M4	USP5,041,025	laser diode optical signal based on a laser diode electrical signal.
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an
M7	USP5,045,635	optical module comprising a laser diode module
M8	USP5,045,971	comprising a laser diode to produce and transmit a
M9	USP5,046,955	laser diode optical signal based on a laser diode
M10	USP5,060,373	electrical signal.
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
N2	USP5,093,879	N2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter

		to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical
N4	USP5,101,463	module comprising a laser diode module
N5	USP5,104,243	comprising a laser diode to produce and transmit a
N6	USP5,107,404	laser diode optical signal based on a laser diode
N7	USP5,108,294	electrical signal.
N8	USP5,109,453	
N9	USP5,113,467	N9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an
N11	USP5,117,476	optical module comprising a laser diode module
N12	USP5,118,362	comprising a laser diode to produce and transmit a
N13	USP5,118,904	laser diode optical signal based on a laser diode
N14	USP5,120,578	electrical signal.
N15	USP5,122,893	N15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical
N17	USP5,125,849	module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
N19	USP5,132,871	N19 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
D . C	T:41.	Distinction between veforence(s) and claim(s)

Ref	Title	Distinction between reference(s) and claim(s)
01	USP5,134,677	O1 through O3 do not disclose, at least, an optical
O2	USP5,134,679	module comprising a laser diode module
O3		comprising a laser diode to produce and transmit a
	USP5,136,063	laser diode optical signal based on a laser diode
		electrical signal.
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical
O5	USP5,136,603	module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

O6	USP5,138,537	O6 through O8 do not disclose, at least, an optical
07	USP5,138,678	module comprising a laser diode module
08		comprising a laser diode to produce and transmit a
	USP5,140,663	laser diode optical signal based on a laser diode
		electrical signal.
09	USP5,155,786	O9 and O10 do not disclose, at least, an optical
010		module comprising a laser diode electrical signal
	HCD5 157 760	converter to convert serial data, which a serial
	USP5,157,769	connector transfers, into a laser diode electrical
		signal.
011		O11 does not disclose, at least, an optical module
	USP5,167,139	comprising a laser diode module comprising a laser
	0373,107,139	diode to produce and transmit a laser diode optical
		signal based on a laser diode electrical signal.
O12		O12 does not disclose, at least, an optical module
	USP5,168,537	comprising a laser diode electrical signal converter
	031 3,100,337	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an
O14	USP5,171,167	optical module comprising a laser diode module
O15	USP5,173,059	comprising a laser diode to produce and transmit a
016	USP5,183,404	laser diode optical signal based on a laser diode
017	USP5,183,405	electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical
P2	USP5,202,536	module comprising a laser diode module
P3	USP5,207,597	comprising a laser diode to produce and transmit a
P4	USP5,212,752	laser diode optical signal based on a laser diode electrical signal.
P5	USP5,212,754	P5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical
P7	USP5,225,760	module comprising a laser diode module
P8	USP5,233,676	comprising a laser diode to produce and transmit a
P9	USP5,233,674	laser diode optical signal based on a laser diode
P10	USP5,234,353	electrical signal.
P11	USP5,238,426	
P12	USP5,241,614	P12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
P13	USP5,247,532	P13 does not disclose, at least, an optical module

		comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical
P15	USP5,259,054	module comprising a laser diode module
P16	USP5,262,923	comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
P17	USP5,271,079	P17 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Q1		Q1 does not disclose, at least, an optical module
	USP5,274,729	comprising a laser diode module comprising a laser
	USF 3,274,729	diode to produce and transmit a laser diode optical
	_	signal based on a laser diode electrical signal.
Q2		Q2 does not disclose, at least, an optical module
	USP5,285,466	comprising a laser diode electrical signal converter
	051 3,203, 100	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
Q3		Q3 does not disclose, at least, an optical module
	USP5,285,511	comprising a laser diode module comprising a laser
		diode to produce and transmit a laser diode optical
		signal based on a laser diode electrical signal.
Q4		Q4 does not disclose, at least, an optical module
!	USP5,285,512	comprising a laser diode electrical signal converter
	, ,	to convert serial data, which a serial connector
05	HSD5 207 207	transfers, into a laser diode electrical signal.  Q5 through Q16 do not disclose, at least, an optical
Q5	USP5,286,207	module comprising a laser diode module
Q6	USP5,286,247	comprising a laser diode to produce and transmit a
Q7	USP5,288,247	laser diode optical signal based on a laser diode
Q8	USP5,289,347	electrical signal.
Q9	USP5,296,813	olectrical signal.
Q10	USP5,299,089	-
Q11_	USP5,304,069	-
Q12	USP5,305,182	-
Q13	USP5,311,408	-
Q14	USP5,315,679	_
$\overline{}$	USP5,317,663	-
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical
R2	USP5,333,221	module comprising a laser diode module
R3		comprising a laser diode to produce and transmit a
	USP5,333,225	laser diode optical signal based on a laser diode
		electrical signal.
R4		R4 does not disclose, at least, an optical module
	USP5,337,391	comprising a laser diode electrical signal converter
	031 3,337,371	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
	USP5,337,396	R5 and R6 do not disclose, at least, an optical
R6		module comprising a laser diode module
	USP5,340,340	comprising a laser diode to produce and transmit a
	051 5,5 10,5 10	laser diode optical signal based on a laser diode
	(41)	electrical signal.
	USP5,345,524	R7 and R8 do not disclose, at least, an optical
R8		module comprising a laser diode electrical signal
	USP5,345,530	converter to convert serial data, which a serial
		connector transfers, into a laser diode electrical
		signal.
R9		R9 does not disclose, at least, an optical module
		comprising a single circuit board, on which a serial
	HIGDS 252 264	connector and a laser diode electrical signal
	USP5,353,364	converter are mounted and to which a laser diode
		and a photo diode module are electrically connected proximate to a first edge of the circuit
		board.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an
	USP5,356,300	optical module comprising a laser diode module
R12	001 0,000,000	comprising a laser diode to produce and transmit a
L I	USP5,357,402	laser diode optical signal based on a laser diode
	001 0,00 1, 102	electrical signal.
R13		R13 does not disclose, at least, an optical module
1	YYODG 261 244	comprising a laser diode electrical signal converter
	USP5,361,244	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an
	USP5,366,664	optical module comprising a laser diode module
R16		comprising a laser diode to produce and transmit a
1	USP5,372,515	laser diode optical signal based on a laser diode
1	• •	electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)

S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical
S2	USP5,383,793	module comprising a laser diode module
S3	USP5,388,995	comprising a laser diode to produce and transmit a
S4	USP5,390,268	laser diode optical signal based on a laser diode
S5	USP5,393,249	electrical signal.
S6	USP5,397,242	
S7_	USP5,398,154	
S8	USP5,398,295	
S9_	USP5,408,384	
S10	USP5,414,787	S10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
S11	USP5,416,668	S11 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical
S14	USP5,419,717	module comprising a laser diode module
S15	USP5,424,573	comprising a laser diode to produce and transmit a
S16	USP5,428,703	laser diode optical signal based on a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical
Т3	USP5,443,390	module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
T4	USP5,446,814	T4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

·	T6 does not disclose, at least, an optical module
USP5,454,080	comprising a laser diode module comprising a laser
	diode to produce and transmit a laser diode optical
	signal based on a laser diode electrical signal.
	T7 does not disclose, at least, an optical module
LISPS 455 703	comprising a laser diode electrical signal converter
051 5,155,705	to convert serial data, which a serial connector
	transfers, into a laser diode electrical signal.
USP5,463,532	T8 and T9 do not disclose, at least, an optical
	module comprising a laser diode module
11505 460 332	comprising a laser diode to produce and transmit a
USF 3,409,332	laser diode optical signal based on a laser diode
	electrical signal.
USP5,470,257	These references do not qualify as prior art.
	Applicants have claimed priority to Japanese
USP5,470,259	Application No. 06-086691, filed on April 25,
	1994, in Japan.
	T12 does not disclose, at least, an optical module
11CD5 475 724	comprising a laser diode module comprising a laser
031 3,473,734	diode to produce and transmit a laser diode optical
	signal based on a laser diode electrical signal.
USP5,477,418	These references do not qualify as prior art.
	Applicants have claimed priority to Japanese
USP5,478,253	Application No. 06-086691, filed on April 25,
	1994, in Japan.
USP5,478,259	T15 and T16 do not disclose, at least, an optical
	module comprising a laser diode module
11905 478 260	comprising a laser diode to produce and transmit a
0313,470,200	laser diode optical signal based on a laser diode
	electrical signal.
	USP5,455,703  USP5,463,532  USP5,469,332  USP5,470,257  USP5,470,259  USP5,475,734  USP5,477,418  USP5,478,253

Ref	Title	Distinction between reference(s) and claim(s)
U1		U1 does not disclose, at least, an optical module
	USP5,481,634	comprising a laser diode module comprising a laser
	0313,461,034	diode to produce and transmit a laser diode optical
		signal based on a laser diode electrical signal.
U2		U2 does not disclose, at least, an optical module
	LICDS 402 650	comprising a laser diode electrical signal converter
	USP5,482,658	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical
U4		module comprising a laser diode module
	VIODE 401 612	comprising a laser diode to produce and transmit a
	USP5,491,613	laser diode optical signal based on a laser diode
		electrical signal.

U5		This reference does not qualify as prior art.
	USP5,491,712	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25,
1		1994, in Japan.
U6		U6 does not disclose, at least, an optical module
	HCD5 404 747	comprising a laser diode module comprising a laser
	USP5,494,747	diode to produce and transmit a laser diode optical
		signal based on a laser diode electrical signal.
U7		This reference does not qualify as prior art.
1	USP5,499,311	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
TIO		1994, in Japan. U8 does not disclose, at least, an optical module
U8		comprising a laser diode electrical signal converter
	USP5,499,312	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
U9		This reference does not qualify as prior art.
	USP5,504,657	Applicants have claimed priority to Japanese
	031 3,304,037	Application No. 06-086691, filed on April 25,
		1994, in Japan.
U10		U10 does not disclose, at least, an optical module
	USP5,506,921	comprising a laser diode electrical signal converter to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an
U12	USP5,507,668	optical module comprising a laser diode module
U13	USP5,526,235	comprising a laser diode to produce and transmit a
U14		laser diode optical signal based on a laser diode
	USP5,527,991	electrical signal.
U15	USP5,534,662	This reference does not qualify as prior art.
U16		Applicants have claimed priority to Japanese
	USP5,535,296	Application No. 06-086691, filed on April 25,
L		1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
V2	USP5,545,845	These references do not qualify as prior art.
V3	USP5,546,281	Applicants have claimed priority to Japanese
V4	USP5,547,385	Application No. 06-086691, filed on April 25, 1994, in Japan.
V5	USP5,548,641	V5 does not disclose, at least, an optical module comprising a laser diode module comprising a laser

		diode to produce and transmit a laser diode optical
		signal based on a laser diode electrical signal.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical
V8	USP5,554,037	module comprising a laser diode module
V9	USP5,567,167	comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
V10	USP5,577,064	V10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
V11	USP5,580,269	V11 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical
V14	USP5,599,595	module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art.
W2	USP5,631,998	Applicants have claimed priority to Japanese
W3	USP5,653,596	Application No. 06-086691, filed on April 25, 1994, in Japan.
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical

		signal based on a laser diode electrical signal.
W5	USP5,675,428	These references do not qualify as prior art.
W6	USP5,687,267	Applicants have claimed priority to Japanese
W7	USP5,717,533	Application No. 06-086691, filed on April 25,
W8	USP5,724,729	1994, in Japan.
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art.
X2	USP5,879,173	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical
X4	EP 0 232792 A1	module comprising a laser diode module
X5	EP.0 228 278	comprising a laser diode to produce and transmit a
X6	EP.0 305112 A2	laser diode optical signal based on a laser diode
	EP.0 303112 A2	electrical signal.
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical
X8		module comprising a laser diode electrical signal
	EP.0 413 489 A2	converter to convert serial data, which a serial
	Er.0 413 469 A2	connector transfers, into a laser diode electrical
		signal.
X9		X9 does not disclose, at least, an optical module
	EP.0 437 161 A2	comprising a laser diode module comprising a laser
		diode to produce and transmit a laser diode optical
		signal based on a laser diode electrical signal.
X10		X10 does not disclose, at least, an optical module
	EP.0 456 298 B1	comprising a laser diode electrical signal converter
	E1:0430298B1	to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.
X11		X11 does not disclose, at least, an optical module
	EP.0 530 791 A2	comprising a laser diode module comprising a laser
		diode to produce and transmit a laser diode optical
		signal based on a laser diode electrical signal.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an
X13	EP.0 588 014 A2	optical module comprising a laser diode electrical

X14	EP.0 600 645 A1	signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
X15	EP.0 613 032 A2	X15 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an
X17	EP.0 656 696 A1	optical module comprising a laser diode module
X18	EP.0 662 259 B1	comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
X19	EP.442 608 A2	X19 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical
X21	JP.1-237783	module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical
Y2	JP.2-181710	module comprising a laser diode electrical signal
Y3	JP.2-278212	converter to convert serial data, which a serial
Y4	JP.2-87837	connector transfers, into a laser diode electrical signal.
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical
Y6	JP.3-94869	module comprising a laser diode module
Y7	JP.4-109593	comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical
Y9	JP.4-165312	module comprising a laser diode electrical signal
Y10	JP.4-211208	converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an
Y12	JP.4-229962	optical module comprising a laser diode module

Y13	JP.4-230978	comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
Y14	JP.4-234715	Y14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an
Y16	JP.4-50901	optical module comprising a laser diode module
Y17	JP.4-87809	comprising a laser diode to produce and transmit a
Y18	JP.5-052802	laser diode optical signal based on a laser diode electrical signal.
Y19	JP.5-134147	Y19 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical
Z2		module comprising a laser diode electrical signal
	JP.5-188250	converter to convert serial data, which a serial
	31.5-100250	connector transfers, into a laser diode electrical
		signal.
Z3		Z3 does not disclose, at least, an optical module
	JP.5-211379	comprising a laser diode module comprising a laser
	01.5 211579	diode to produce and transmit a laser diode optical
		signal based on a laser diode electrical signal.
Z4		Z4 does not disclose, at least, an optical module
	JP.5-218581	comprising a laser diode electrical signal converter
		to convert serial data, which a serial connector
	TD 5 000010	transfers, into a laser diode electrical signal.
<u>Z5</u>	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical
<u>Z6</u>	JP.5-70955	module comprising a laser diode module
<u>Z7</u>	JP.61-158046	comprising a laser diode to produce and transmit a
Z8	JP.61-188385	laser diode optical signal based on a laser diode electrical signal.
<b>Z9</b>		Z9 does not disclose, at least, an optical module
		comprising a single circuit board, on which a serial
		connector and a laser diode electrical signal
	JP.63-009325	converter are mounted and to which a laser diode
		and a photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an
Z11	JP.63-65967	optical module comprising a laser diode module

Z12	JP.63-65978	comprising a laser diode to produce and transmit a
Z13	JP.63-82998	laser diode optical signal based on a laser diode
Z14	U-3-20458	electrical signal.
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an
AA2	U-63-16496	optical module comprising a laser diode module
AA3	U-63-65967	comprising a laser diode to produce and transmit a
AA4	U-63-65978	laser diode optical signal based on a laser diode
AA5	U-63-82998	electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
BB2	Ronald LSoderstrom et al.,"An optical Date Link using a CD laser", SPIE Vol. 1577 High Speed Fiber Networks and Channels, pp. 163-173, 1991	BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode electrical
BB3	BCP,Inc."Gigabits Over Multimode Optical Fiber"no date	signal converter to convert serial data, which a serial connector transfers, into a laser diode
BB4	Ronald L.Soderstrom et al., "CD laser optical Date Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	electrical signal.
BB5	FDDI Low-Cost Fiber Phyiscal Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	BB5 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
BB6	HP Module HFBR-5103, FDDI Data Sheet,http://www.hp.com/HP- COMP/fiber/hfbr5103.html,Jun.11,1998	B06 and B07 do not disclose, at least, an optical module comprising a laser diode module
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System".www.patents.ibm.com/tdbs/tdb?ℴ=93A+60964,April 1993	comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
BB8	IBM, "A Proposal for a New High Performance… "OptopElectronics Enterprise Oct.1992 ANSI Meeting,Oct.13,1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode electrical signal
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
BB10	Methode Electronics, Inc., "DM 1063-DBLM9	BB10 does not disclose, at least, an optical module

	Copper Gigabit Link Module" data sheet.(no date)	comprising a laser diode module comprising a laser
		diode to produce and transmit a laser diode optical
		signal based on a laser diode electrical signal.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	BB11 does not disclose, at least, an optical module
		comprising a laser diode electrical signal converter
		to convert serial data, which a serial connector
		transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Sandards?" no date.	CC3 through CC5 do not disclose, at least, an
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	optical module comprising a laser diode electrical signal converter to convert serial data, which a
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922,Dec.1993.	serial connector transfers, into a laser diode electrical signal.
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	CC7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	CC8 and CC9 do not disclose, at least, an optical module comprising a laser diode module
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454.definition of LED, Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
CC11	Edward R.Salmon,Encapsulation of Electronic Devices and Components,Marcel Deckker Inc.,New York,1987	CC11 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conducive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode module
DD2	HEADS UpSumitomo Electric Lightwave joins Other in Announcement, May 11,1995	comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	electrical signal.
DD4	Shortwave Opto Assembly, IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev. 1, Jan. 6, 1993	DD4 and DD5 do not disclose, at least, an optical module comprising a laser diode electrical signal
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge", IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar., 1987	converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.	DD6 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
DD7	Ronald LSoderstrom et al., A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD) FOC/LAN'87&MFOC-WEST,pp.383-385,no date.	DD7 through DD9 do not disclose, at least, an optical module comprising a laser diode electrical
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
DD9	Ronald L.Soderstrom et al., Optical Components and Electronic Packaging for High Performance Optical Date Links, THE RESEARCH INVESTMENT, p. 19-28 (no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute,1996.	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber, Van Nostrand Reinhold Publishing, 1983	laser diode optical signal based on a laser diode electrical signal.
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	

i	Ronald L.Soderstrom et al., "CD laser as a fiber optic
	source for computer date links", Fiber Optic Datacom
EE4	and Computer Networks, SPIE-The International
i	Society for Optical Engineerdings, Vol. 1577, pp. 174-
	181,1988
	David A.Knodel et al.,"Open Fibre
1	Control,a laser safety interlock
EE5	technique", High-Speed Fiber Networks and
EE3	Channels, SPIE-The International Society
	for Optical Engineering
	Proceedings, Vol. 991, pp. 179-182, 1992
	"IBM Technical Disclosure Bulletin,
EEC	
EE6	Electrostatic Dissipative Enclosed
	Connector", Vol.34, No.7B, Dec.1991
	"High Reliability SW Laser For Optical Data Links",
EE7	LEOS '93 Conference Proceedings, IEEE Lasers and
	Electro-Optics Society 1993 Annual Meeting; Minimizing Electrostatic Discharge to a
	Cartridge, IBM Technical Disclosure Bulletin, March
EE8	1987,https://www.delphion.com/tdb?o=87A%2060509
	,last visited Mar.8,2005.
	K.P.Jackson et al., "High-Density, Array, Optical
EE9	Interconnects for Multi-Chip Module Conference
LES	MCMC-92 Proceedings, IEEE Computer Society
	Press.
	TDB:Stackable Circuit Card Packaging
	within a Logic Cage, IBM Technical
PELO	Disclosure
EE10	Bulletin, Dec. 1992, https://www.delphion.co
	m/tbds/tdb?o=92A%2063485,last visited
	Mar.8,2005
	Jeff Hechi, The Laser Guidebook, 2nd
EE11	edMcGraw Hill,Inc.,1992
	Cu.,IVICOIAW IIIII,IIIC., 1772

## Claim Chart for Claim 170 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical
A2	USP2,899,669	module comprising a laser diode module to convert
A3	USP3,264,601	a laser diode electrical signal into a laser diode
A4	USP3,332,860	optical signal and transmit the laser diode optical
A5	USP3,474,380	signal, which is transmitted at a data transmission
A6	USP3,497,866	rate of 1000 Mbits/s or more.
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
A14	USP3,805,116	A14 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical
A16	USP3,976,877	module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical
B2	USP4,047,242	module comprising a laser diode module to convert
B3		a laser diode electrical signal into a laser diode
	USP4,156,903	optical signal and transmit the laser diode optical
	USF4,130,903	signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
B4		B4 does not disclose, at least, an optical module
	USP4,161,650	comprising a laser diode electrical signal converter
	05F4,101,030	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical
B6	USP4,176,897	module comprising a laser diode module to convert

B7	USP4,217,019	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
B8	USP4,217,488	B8 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical
B10	USP4,234,968	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
B11	USP4,249,266	B11 through B13 do not disclose, at least, an
B12	USP4,252,402	optical module comprising a laser diode electrical
B13	USP4,257,124	signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical
B15	USP4,273,413	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
B16	USP4,276,656	B16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
C1		C1 does not disclose, at least, an optical module
	USP4,294,682	comprising a laser diode electrical signal converter
}		to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
C2		C2 does not disclose, at least, an optical module
	USP4,295,181	comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
-		signal and transmit the laser diode optical signal,
-		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical

C4		module comprising a single circuit board mounting
	HSD4 220 970	thereon a serial connector, a laser diode electrical
	USP4,330,870	signal converter and an integrated circuit electrically coupled to a photo diode to produce
		serial data.
C5		C5 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
	USP4,345,808	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
C6		C6 does not disclose, at least, an optical module
		comprising a single circuit board mounting thereon
	USP4,347,655	a serial connector, a laser diode electrical signal
		converter and an integrated circuit electrically
		coupled to a photo diode to produce serial data.
C7		C7 does not disclose, at least, an optical module
	HSD4 257 606	comprising a laser diode electrical signal converter
	USP4,357,606	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
C8		C8 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	USP4,360,248	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
C9		C9 does not disclose, at least, an optical module
		comprising a single circuit board mounting thereon
	USP4,366,565	a serial connector, a laser diode electrical signal
		converter and an integrated circuit electrically
-	7707 10 60 10 1	coupled to a photo diode to produce serial data.
	USP4,369,494	C10 through C15 do not disclose, at least, an
C11	USP4,380,360	optical module comprising a laser diode module to
C12	USP4,388,671	convert a laser diode electrical signal into a laser
C13	USP4,393,516	diode optical signal and transmit the laser diode
C14	USP4,398,073	optical signal, which is transmitted at a data
C15	USP4,398,780	transmission rate of 1000 Mbits/s or more.
C16		C16 does not disclose, at least, an optical module
	USP4,399,563	comprising a single circuit board mounting thereon
		a serial connector, a laser diode electrical signal
		converter and an integrated circuit electrically
		coupled to a photo diode to produce serial data.

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 does not disclose, at least, an optical module

		comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical
D3	USP4,427,879	module comprising a laser diode electrical signal
D4		converter to convert serial data, received from a
-	USP4,430,699	motherboard, into a laser diode electrical signal.
D5		D5 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
ļ		diode electrical signal into a laser diode optical
	USP4,434,537	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
D6		D6 does not disclose, at least, an optical module
טע		comprising a laser diode electrical signal converter
	USP4,437,190	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
D7		D7 does not disclose, at least, an optical module
ו ט		
	HGD4 420 006	comprising a single circuit board mounting thereon
	USP4,439,006	a serial connector, a laser diode electrical signal
i		converter and an integrated circuit electrically
		coupled to a photo diode to produce serial data.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical
D9		module comprising a laser diode electrical signal
1	USP4,449,244	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
D10	USP4,449,784	D10 through D13 do not disclose, at least, an
D11	USP4,453,903	optical module comprising a laser diode module to
D12	USP4,459,658	convert a laser diode electrical signal into a laser
D13		diode optical signal and transmit the laser diode
	USP4,461,537	optical signal, which is transmitted at a data
		transmission rate of 1000 Mbits/s or more.
D14		D14 does not disclose, at least, an optical module
	USP4,470,154	comprising a laser diode electrical signal converter
	03:4,470,134	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
D15		D15 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	HGD4 496 050	diode electrical signal into a laser diode optical
	USP4,486,059	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
D16		D16 does not disclose, at least, an optical module
	USP4,493,113	comprising a laser diode electrical signal converter
	<u> </u>	

to convert serial data, received from a motherboard,
into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
E1		E1 does not disclose, at least, an optical module
	USP4,501,021	comprising a laser diode electrical signal converter
	0574,301,021	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical
E3	USP4,505,035	module comprising a laser diode module to convert
E4	USP4,506,937	a laser diode electrical signal into a laser diode
E5		optical signal and transmit the laser diode optical
	USP4,510,553	signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
E6		E6 does not disclose, at least, an optical module
		comprising a single circuit board mounting thereon
İ	USP4,511,207	a serial connector, a laser diode electrical signal
		converter and an integrated circuit electrically
		coupled to a photo diode to produce serial data.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical
E8	USP4,516,204	module comprising a laser diode module to convert
E9	USP4,519,670	a laser diode electrical signal into a laser diode
E10	USP4,519,672	optical signal and transmit the laser diode optical
E11	USP4,519,673	signal, which is transmitted at a data transmission
E12	USP4,522,463	rate of 1000 Mbits/s or more.
E13	USP4,526,438	
E14	USP4,526,986	, , , , , , , , , , , , , , , , , , , ,
E15		E15 does not disclose, at least, an optical module
	USP4,527,286	comprising a laser diode electrical signal converter
	031 4,327,280	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
E16		E16 does not disclose, at least, an optical module
	USP4,529,266	comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
L		1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical
F2	USP4,531,810	module comprising a laser diode module to convert

F3	USP4,533,208	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.  F4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter
	USP4,533,209	to convert serial data, received from a motherboard, into a laser diode electrical signal.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical
F6	USP45,34,617	module comprising a laser diode module to convert
F7	USP4,535,233	a laser diode electrical signal into a laser diode
F8	USP4,537,468	optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
F9	USP4,539,476	F9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical
F11	USP4,540,246	module comprising a laser diode module to convert
F12	USP4,541,036	a laser diode electrical signal into a laser diode
F13	USP4,541,685	optical signal and transmit the laser diode optical
F14	USP4,542,076	signal, which is transmitted at a data transmission
F15	USP4,544,231	rate of 1000 Mbits/s or more.
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical
G3	USP4,545,077	module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and an integrated circuit electrically coupled to a photo diode to produce serial data.
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical
G5	USP4,545,643	module comprising a laser diode module to convert
G6	USP4,545,644	a laser diode electrical signal into a laser diode
G7	USP4,545,645	optical signal and transmit the laser diode optical
G8	USP4,548,465	signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

G9		G9 does not disclose, at least, an optical module
	HIGDA 540 466	comprising a laser diode electrical signal converter
	USP4,548,466	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
G10		G10 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	LICDA 540 467	diode electrical signal into a laser diode optical
:	USP4,548,467	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
G11		G11 does not disclose, at least, an optical module
	USP4,549,782	comprising a laser diode electrical signal converter
	0354,349,762	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an
G13	USP4,550,975	optical module comprising a laser diode module to
G14		convert a laser diode electrical signal into a laser
	USP4,553,811	diode optical signal and transmit the laser diode
	0574,333,811	optical signal, which is transmitted at a data
		transmission rate of 1000 Mbits/s or more.
G15		G15 does not disclose, at least, an optical module
	USP4,553,813	comprising a laser diode electrical signal converter
1	031 4,333,013	to convert serial data, received from a motherboard,
4		into a laser diode electrical signal.
G16		G16 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	USP4,553,814	diode electrical signal into a laser diode optical
	0314,333,614	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical
H2	USP4,556,281	module comprising a laser diode module to convert
H3	USP4,556,282	a laser diode electrical signal into a laser diode
H <sub>4</sub>	USP4,557,551	optical signal and transmit the laser diode optical
H5	USP4,560,234	signal, which is transmitted at a data transmission
H6	USP4,563,057	rate of 1000 Mbits/s or more.
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11		H11 does not disclose, at least, an optical module
	USP4,580,295	comprising a laser diode electrical signal converter to convert serial data, received from a motherboard,

		into a laser diode electrical signal.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an
H13	USP4,588,256	optical module comprising a laser diode module to
H14	USP4,589,728	convert a laser diode electrical signal into a laser
H15	USP4,597,631	diode optical signal and transmit the laser diode
H16	USP4,614,836	optical signal, which is transmitted at a data
	USF4,014,030	transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module
I2		comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
	USP4,634,239	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
<u> </u>		1000 Mbits/s or more.
I3		I3 does not disclose, at least, an optical module
		comprising a single circuit board mounting thereon
	USP4,641,371	a serial connector, a laser diode electrical signal
		converter and an integrated circuit electrically
TA	11004 (47 140	coupled to a photo diode to produce serial data.  I4 through I16 do not disclose, at least, an optical
<u>I4</u>	USP4,647,148	module comprising a laser diode module to convert
15	USP4,652,976	a laser diode electrical signal into a laser diode
<u>I6</u>	USP4,663,240	optical signal and transmit the laser diode optical
17	USP4,663,603	signal, which is transmitted at a data transmission
18	USP4,678,264	rate of 1000 Mbits/s or more.
I9	USP4,679,883	- Interest of 1000 Priority's of More.
I10	USP4,695,106	-
I11 I12	USP4,697,864	-[
	USP4,708,433	-
I13	USP4,715,675	-{
I14	USP4,720,630	-
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical
J2	USP4,762,388	module comprising a laser diode module to convert
J3	USP4,767,179	a laser diode electrical signal into a laser diode
J4	USP4,772,931	optical signal and transmit the laser diode optical
J5	USP4,779,952	signal, which is transmitted at a data transmission
J6	USP4,789,218	rate of 1000 Mbits/s or more.
J7	USP4,798,430	
J8	USP4,798,440	

J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
K1		K1 does not disclose, at least, an optical module
	USP4,840,451	comprising a laser diode electrical signal converter
]	0314,840,431	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
K2		K2 does not disclose, at least, an optical module
		comprising a single circuit board mounting thereon
	USP4,844,581	a serial connector, a laser diode electrical signal
ŀ		converter and an integrated circuit electrically
		coupled to a photo diode to produce serial data.
K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical
K4	USP4,847,771	module comprising a laser diode module to convert
K5	USP4,849,944	a laser diode electrical signal into a laser diode
K6	USP4,857,002	optical signal and transmit the laser diode optical
K7	USP4,862,327	signal, which is transmitted at a data transmission
K8	USP4,872,212	rate of 1000 Mbits/s or more.
K9	USP4,872,736	
K10		K10 does not disclose, at least, an optical module
	USP4,881,789	comprising a laser diode electrical signal converter
	0314,881,789	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
K11		K11 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	USP4,884,336	diode electrical signal into a laser diode optical
	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
77.10		1000 Mbits/s or more.
K12		K12 does not disclose, at least, an optical module
	USP4,897,711	comprising a laser diode electrical signal converter
		to convert serial data, received from a motherboard,
77.10	HODA 006 107	into a laser diode electrical signal.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an
K14	USP4,927,225	optical module comprising a laser diode module to

K15	USP4,944,568	convert a laser diode electrical signal into a laser
K16		diode optical signal and transmit the laser diode
	USP4,945,448	optical signal, which is transmitted at a data
		transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical
L2	USP4,955,817	module comprising a laser diode module to convert
L3	USP4,963,104	a laser diode electrical signal into a laser diode
L4	USP4,967,312	optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical
L7	USP4,979,794	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical
L9	USP4,989,934	module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical
L11	USP4,991,062	module comprising a laser diode module to convert
L12	USP5,002,495	a laser diode electrical signal into a laser diode
L13	USP5,004,434	optical signal and transmit the laser diode optical
L14	USP5,006,286	signal, which is transmitted at a data transmission
L15	USP5,011,425	rate of 1000 Mbits/s or more.
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical
M2	USP5,035,641	module comprising a laser diode module to convert
M3	USP5,040,993	a laser diode electrical signal into a laser diode
M4	USP5,041,025	optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard,

		into a laser diode electrical signal.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an
M7	USP5,045,635	optical module comprising a laser diode module to
M8	USP5,045,971	convert a laser diode electrical signal into a laser
M9	USP5,046,955	diode optical signal and transmit the laser diode
M10	USP5,060,373	optical signal, which is transmitted at a data
M11	USP5,071,219	transmission rate of 1000 Mbits/s or more.
M12	USP5,076,656	_
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
N2	USP5,093,879	N2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical
N4	USP5,101,463	module comprising a laser diode module to convert
N5	USP5,104,243	a laser diode electrical signal into a laser diode
N6	USP5,107,404	optical signal and transmit the laser diode optical
N7	USP5,108,294	signal, which is transmitted at a data transmission
N8	USP5,109,453	rate of 1000 Mbits/s or more.
N9	USP5,113,467	N9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an
N11	USP5,117,476	optical module comprising a laser diode module to

N12	USP5,118,362	convert a laser diode electrical signal into a laser
N13	USP5,118,904	diode optical signal and transmit the laser diode
N14	USP5,120,578	optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
NI15		N15 does not disclose, at least, an optical module
N15	USP5,122,893	comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical
N17	USP5,125,849	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N19	USP5,132,871	N19 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
01	USP5,134,677	O1 through O3 do not disclose, at least, an optical
O2	USP5,134,679	module comprising a laser diode module to convert
O3		a laser diode electrical signal into a laser diode
	USP5,136,063	optical signal and transmit the laser diode optical
	0373,130,003	signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical
O5		module comprising a laser diode electrical signal
	USP5,136,603	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
06	USP5,138,537	O6 through O8 do not disclose, at least, an optical
07	USP5,138,678	module comprising a laser diode module to convert
O8		a laser diode electrical signal into a laser diode
	USP5,140,663	optical signal and transmit the laser diode optical
	031 3,140,003	signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
09	USP5,155,786	O9 and O10 do not disclose, at least, an optical
O10		module comprising a laser diode electrical signal
	USP5,157,769	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.

O11	USP5,167,139	O11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
O12	USP5,168,537	O12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an
O14	USP5,171,167	optical module comprising a laser diode module to
O15	USP5,173,059	convert a laser diode electrical signal into a laser
016	USP5,183,404	diode optical signal and transmit the laser diode
O17	USP5,183,405	optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical
P2	USP5,202,536	module comprising a laser diode module to convert
P3	USP5,207,597	a laser diode electrical signal into a laser diode
P4		optical signal and transmit the laser diode optical
	USP5,212,752	signal, which is transmitted at a data transmission
	- 140	rate of 1000 Mbits/s or more.
P5		P5 does not disclose, at least, an optical module
	USP5,212,754	comprising a laser diode electrical signal converter
	,	to convert serial data, received from a motherboard,
D.C.	HODE 010 510	into a laser diode electrical signal.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical
P7	USP5,225,760	module comprising a laser diode module to convert
P8	USP5,233,676	a laser diode electrical signal into a laser diode
P9	USP5,233,674	optical signal and transmit the laser diode optical
P10	USP5,234,353	signal, which is transmitted at a data transmission
P11	USP5,238,426	rate of 1000 Mbits/s or more.
P12		P12 does not disclose, at least, an optical module
	USP5,241,614	comprising a laser diode electrical signal converter
		to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
P13		P13 does not disclose, at least, an optical module
		comprising a single circuit board mounting thereon
	USP5,247,532	a serial connector, a laser diode electrical signal
		converter and an integrated circuit electrically
		coupled to a photo diode to produce serial data.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical
P15	USP5,259,054	module comprising a laser diode module to convert

P16	USP5,262,923	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
P17	USP5,271,079	P17 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Q1		Q1 does not disclose, at least, an optical module
'		comprising a laser diode module to convert a laser
	USP5,274,729	diode electrical signal into a laser diode optical
	USF 3,274,729	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
Q2		Q2 does not disclose, at least, an optical module
	USP5,285,466	comprising a laser diode electrical signal converter
	051 5,205, 100	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
Q3		Q3 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	USP5,285,511	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
Q4		Q4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter
	USP5,285,512	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
Q5	USP5,286,207	Q5 throuth Q16 do not disclose, at least, an optical
Q6	USP5,286,247	module comprising a laser diode module to convert
Q7	USP5,288,247	a laser diode electrical signal into a laser diode
Q8	USP5,289,347	optical signal and transmit the laser diode optical
Q9	USP5,296,813	signal, which is transmitted at a data transmission
Q10	USP5,299,089	rate of 1000 Mbits/s or more.
Q11	USP5,304,069	1
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)

R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical
R2	USP5,333,221	module comprising a laser diode module to convert
R3		a laser diode electrical signal into a laser diode
	**************************************	optical signal and transmit the laser diode optical
	USP5,333,225	signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
R4		R4 does not disclose, at least, an optical module
	**************************************	comprising a laser diode electrical signal converter
	USP5,337,391	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical
R6		module comprising a laser diode module to convert
		a laser diode electrical signal into a laser diode
	USP5,340,340	optical signal and transmit the laser diode optical
		signal, which is transmitted at a data transmission
1		rate of 1000 Mbits/s or more.
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical
R8		module comprising a laser diode electrical signal
	USP5,345,530	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
R9		R9 does not disclose, at least, an optical module
		comprising a single circuit board mounting thereon
	USP5,353,364	a serial connector, a laser diode electrical signal
		converter and an integrated circuit electrically
		coupled to a photo diode to produce serial data.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an
R11	USP5,356,300	optical module comprising a laser diode module to
R12		convert a laser diode electrical signal into a laser
	LIGDS 257 402	diode optical signal and transmit the laser diode
	USP5,357,402	optical signal, which is transmitted at a data
L		transmission rate of 1000 Mbits/s or more.
R13		R13 does not disclose, at least, an optical module
	USP5,361,244	comprising a laser diode electrical signal converter
	051 5,501,244	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an
R15	USP5,366,664	optical module comprising a laser diode module to
R16		convert a laser diode electrical signal into a laser
	USP5,372,515	diode optical signal and transmit the laser diode
		optical signal, which is transmitted at a data
		transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical
S2	USP5,383,793	module comprising a laser diode module to convert

S3	USP5,388,995	a laser diode electrical signal into a laser diode
S4	USP5,390,268	optical signal and transmit the laser diode optical
S5	USP5,393,249	signal, which is transmitted at a data transmission
S6	USP5,397,242	rate of 1000 Mbits/s or more.
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	S10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
S11	USP5,416,668	S11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical
S14	USP5,419,717	module comprising a laser diode module to convert
S15	USP5,424,573	a laser diode electrical signal into a laser diode
S16	USP5,428,703	optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
T1		T1 does not disclose, at least, an optical module
	USP5,428,704	comprising a laser diode electrical signal converter
	031 3,426,704	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical
T3		module comprising a laser diode module to convert
		a laser diode electrical signal into a laser diode
	USP5,443,390	optical signal and transmit the laser diode optical
		signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
T4		T4 does not disclose, at least, an optical module
	USP5,446,814	comprising a laser diode electrical signal converter
	0353,440,614	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
T5	USP5,452,387	This reference does not qualify as prior art.
		Applicants have claimed priority to Japanese

		Application No. 06-086691, filed on April 25,
		1994, in Japan.
Т6	USP5,454,080	T6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
T7	USP5,455,703	T7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical
Т9	USP5,469,332	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
T10	USP5,470,257	These references do not qualify as prior art.
T11	USP5,470,259	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T12	USP5,475,734	T12 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
T13	USP5,477,418	These references do not qualify as prior art.
T14	USP5,478,253	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical
T16	USP5,478,260	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
U1		U1 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	USP5,481,634	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of

		1000 Mbits/s or more.
U2		<u>U2 does</u> not disclose, at least, an optical module
02		comprising a laser diode electrical signal converter
	USP5,482,658	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical
U4	0020,000,000	module comprising a laser diode module to convert
"		a laser diode electrical signal into a laser diode
	USP5,491,613	optical signal and transmit the laser diode optical
		signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
U5		This reference does not qualify as prior art.
	HODE 401 712	Applicants have claimed priority to Japanese
	USP5,491,712	Application No. 06-086691, filed on April 25,
		1994, in Japan.
U6		U6 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	LICDS 404 747	diode electrical signal into a laser diode optical
:	USP5,494,747	signal and transmit the laser diode optical signal,
:		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
U7		This reference does not qualify as prior art.
	USP5,499,311	Applicants have claimed priority to Japanese
	001 5,477,511	Application No. 06-086691, filed on April 25,
		1994, in Japan.
U8		U8 does not disclose, at least, an optical module
	USP5,499,312	comprising a laser diode electrical signal converter
	0010,100,012	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
U9		This reference does not qualify as prior art.
	USP5,504,657	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
7710		1994, in Japan.
U10		U10 does not disclose, at least, an optical module
	USP5,506,921	comprising a laser diode electrical signal converter
		to convert serial data, received from a
7711	HODE 506 022	motherboard, into a laser diode electrical signal.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an
U12	USP5,507,668	optical module comprising a laser diode module to convert a laser diode electrical signal into a laser
U13	USP5,526,235	diode optical signal and transmit the laser diode
U14	LISDS 527 001	optical signal, which is transmitted at a data
	USP5,527,991	transmission rate of 1000 Mbits/s or more.
U15	USP5,534,662	This reference does not qualify as prior art.
	001 3,337,002	This reference does not qualify as prior art.

U16		Applicants have claimed priority to Japanese
	USP5,535,296	Application No. 06-086691, filed on April 25,
		1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
V2	USP5,545,845	These references do not qualify as prior art.
V3	USP5,546,281	Applicants have claimed priority to Japanese
V4	USP5,547,385	Application No. 06-086691, filed on April 25, 1994, in Japan.
V5	USP5,548,641	V5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical
V8	USP5,554,037	module comprising a laser diode module to convert
V9	USP5,567,167	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
V10	USP5,577,064	V10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
V11	USP5,580,269	V11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical
V14		module comprising a laser diode module to convert
		a laser diode electrical signal into a laser diode
	USP5,599,595	optical signal and transmit the laser diode optical
		signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
V15		V15 does not disclose, at least, an optical module
	USP5,600,470	comprising a laser diode electrical signal converter
		to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
V16		This reference does not qualify as prior art.
	11GDG (12.0(0	Applicants have claimed priority to Japanese
	USP5,613,860	Application No. 06-086691, filed on April 25,
		1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art.
W2	USP5,631,998	Applicants have claimed priority to Japanese
W3	USP5,653,596	Application No. 06-086691, filed on April 25,
	USF 3,033,390	1994, in Japan.
W4		W4 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	USP5,659,459	diode electrical signal into a laser diode optical
	031 3,039,439	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
W5	USP5,675,428	
W6	USP5,687,267	
W7	USP5,717,533	
W8	USP5,724,729	These references do not qualify as prior art.
W9	USP5,726,864	Applicants have claimed priority to Japanese
W10	USP5,734,558	Application No. 06-086691, filed on April 25,
W11	USP5,736,782	1994, in Japan.
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art.
X2	USP5,879,173	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25,
		1994, in Japan.

X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical
X4	EP 0 232792 A1	module comprising a laser diode module to convert
X5	EP.0 228 278	a laser diode electrical signal into a laser diode
X6		optical signal and transmit the laser diode optical
110	EP.0 305112 A2	signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical
X8		module comprising a laser diode electrical signal
	EP.0 413 489 A2	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
X9		X9 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	EP.0 437 161 A2	diode electrical signal into a laser diode optical
	E1.0 437 101 A2	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
X10		X10 does not disclose, at least, an optical module
	EP.0 456 298 B1	comprising a laser diode electrical signal converter
		to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
X11		X11 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	EP.0 530 791 A2	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an
X12 X13	EP.0 588 014 A2	optical module comprising a laser diode electrical
X13	EF.0 388 014 A2	signal converter to convert serial data, received
A14	EP.0 600 645 A1	from a motherboard, into a laser diode electrical
	LI .0 000 043 MI	signal.
X15		X15 does not disclose, at least, an optical module
		comprising a single circuit board mounting thereon
	EP.0 613 032 A2	a serial connector, a laser diode electrical signal
		converter and an integrated circuit electrically
		coupled to a photo diode to produce serial data.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an
X17	EP.0 656 696 A1	optical module comprising a laser diode module to
X18		convert a laser diode electrical signal into a laser
	EP.0 662 259 B1	diode optical signal and transmit the laser diode
		optical signal, which is transmitted at a data
		transmission rate of 1000 Mbits/s or more.
X19		X19 does not disclose, at least, an optical module
	EP.442 608 A2	comprising a laser diode electrical signal converter
		to convert serial data, received from a
L		motherboard, into a laser diode electrical signal.

X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical
X21		module comprising a laser diode module to convert
		a laser diode electrical signal into a laser diode
	JP.1-237783	optical signal and transmit the laser diode optical
		signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical
Y2	JP.2-181710	module comprising a laser diode electrical signal
Y3	JP.2-278212	converter to convert serial data, received from a
Y4	JP.2-87837	motherboard, into a laser diode electrical signal.
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical
Y6	JP.3-94869	module comprising a laser diode module to convert
Y7		a laser diode electrical signal into a laser diode
	ID 4 100503	optical signal and transmit the laser diode optical
	JP.4-109593	signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical
Y9	JP.4-165312	module comprising a laser diode electrical signal
Y10	JP.4-211208	converter to convert serial data, received from a
	J1.4-211208	motherboard, into a laser diode electrical signal.
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an
Y12	JP.4-229962	optical module comprising a laser diode module to
Y13		convert a laser diode electrical signal into a laser
	JP.4-230978	diode optical signal and transmit the laser diode
		optical signal, which is transmitted at a data
		transmission rate of 1000 Mbits/s or more.
Y14		Y14 does not disclose, at least, an optical module
ļ	JP.4-234715	comprising a laser diode electrical signal converter
	31.4 23 1713	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an
Y16	JP.4-50901	optical module comprising a laser diode module to
Y17	JP.4-87809	convert a laser diode electrical signal into a laser
Y18		diode optical signal and transmit the laser diode
	JP.5-052802	optical signal, which is transmitted at a data
77.5		transmission rate of 1000 Mbits/s or more.
Y19		Y19 does not disclose, at least, an optical module
	JP.5-134147	comprising a laser diode electrical signal converter
		to convert serial data, received from a
		motherboard, into a laser diode electrical signal.

D.C	TP*41	Distinction hat C () and alater (a)	
i Ket i	Litte	Distinction between reference(s) and claim(s)	

Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical
$\overline{Z2}$	01.5 102551	module comprising a laser diode electrical signal
	JP.5-188250	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
Z3		Z3 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
	JP.5-211379	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
Z4		Z4 does not disclose, at least, an optical module
	ID 5 219591	comprising a laser diode electrical signal converter
	JP.5-218581	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
<b>Z</b> 5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical
<b>Z</b> 6	JP.5-70955	module comprising a laser diode module to convert
<b>Z</b> 7	JP.61-158046	a laser diode electrical signal into a laser diode
Z8		optical signal and transmit the laser diode optical
	JP.61-188385	signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
Z9		Z9 does not disclose, at least, an optical module
		comprising a single circuit board mounting thereon
į	JP.63-009325	a serial connector, a laser diode electrical signal
		converter and an integrated circuit electrically
		coupled to a photo diode to produce serial data.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an
Z11	JP.63-65967	optical module comprising a laser diode module to
Z12	JP.63-65978	convert a laser diode electrical signal into a laser
Z13	JP.63-82998	diode optical signal and transmit the laser diode
Z14	U-3-20458	optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
Z15	U-3-94869	transmission rate of 1000 Midits/s or more.
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an
AA2	U-63-16496	optical module comprising a laser diode module to
AA3	U-63-65967	convert a laser diode electrical signal into a laser
AA4	U-63-65978	diode optical signal and transmit the laser diode
AA5	U-63-82998	optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)

BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
BB2	Ronald LSoderstrom et al.,"An optical Date Link using a CD laser", SPIE Vol. 1577 High Speed Fiber Networks and Channels, pp. 163-173, 1991	BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode electrical
BB3	BCP,Inc."Gigabits Over Multimode Optical Fiber"no date	signal converter to convert serial data, received
BB4	Ronald L.Soderstrom et al., "CD laser optical Date Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	from a motherboard, into a laser diode electrical signal.
BB5	FDDI Low-Cost Fiber Phyiscal Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	BB5 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and an integrated circuit electrically coupled to a photo diode to produce serial data.
BB6	HP Module HFBR-5103, FDDI Data Sheet,http://www.hp.com/HP- COMP/fiber/hfbr5103.html,Jun.11,1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module to convert
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System".www.patents.ibm.com/tdbs/tdb?ℴ=93A +60964,April 1993	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
BB8	IBM, "A Proposal for a New High Performance "OptopElectronics Enterprise Oct.1992 ANSI Meeting,Oct.13,1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode electrical signal
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	BB10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	BB11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
CCI	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25,
CC3	Siemens, "Who provides Low-Cost Transceivers for all Sandards?" no date.	1994, in Japan.  CC3 through CC5 do not disclose, at least, an
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	optical module comprising a laser diode electrical signal converter to convert serial data, received
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922,Dec.1993.	from a motherboard, into a laser diode electrical signal.
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	CC7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	CC8 and CC9 do not disclose, at least, an optical module comprising a laser diode module to convert
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
CC10	Martin H. Weik,"Communication Standard Dictionary"p.454.definition of LED, Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC11	Edward R.Salmon, Encapsulation of Electronic Devices and Components, Marcel Deckker Inc., New York, 1987	CC11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conducive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode module to
DD2	HEADS Up-Sumitomo Electric Lightwave joins Other in Announcement, May 11,1995	convert a laser diode electrical signal into a laser
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
DD4	Shortwave Opto Assembly,IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev.1,Jan.6,1993	DD4 and DD5 do not disclose, at least, an optical module comprising a laser diode electrical signal

DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge", IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar., 1987	converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.	DD6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
DD7	Ronald LSoderstrom et al., A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD) FOC/LAN' 87&MFOC-WEST,pp.383-385,no date.	DD7 through DD9 do not disclose, at least, an optical module comprising a laser diode electrical
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
DD9	Ronald L.Soderstrom et al., Optical Components and Electronic Packaging for High Performance Optical Date Links, THE RESEARCH INVESTMENT, p. 19-28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and an integrated circuit electrically coupled to a photo diode to produce serial data.
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
EEI	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute,1996.	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	diode optical signal and transmit the laser diode optical signal, which is transmitted at a data
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	transmission rate of 1000 Mbits/s or more.
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer date links", Fiber Optic Datacom and Computer Networks, SPIE-The International Society for Optical Engineerdings, Vol. 1577, pp. 174-181, 1988	
EE5	David A.Knodel et al.,"Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	

	"IBM Technical Disclosure Bulletin,
EE6	Electrostatic Dissipative Enclosed
	Connector", Vol.34, No.7B, Dec. 1991
	"High Reliability SW Laser For Optical Data Links",
EE7	LEOS '93 Conference Proceedings, IEEE Lasers and
	Electro-Optics Society 1993 Annual Meeting;
	Minimizing Electrostatic Discharge to a
EE8	Cartridge, IBM Technical Disclosure Bulletin, March
	1987,https://www.delphion.com/tdb?o=87A%2060509
	,last visited Mar.8,2005.
	K.P.Jackson et al., "High-Density, Array, Optical
EE9	Interconnects for Multi-Chip Module Conference
	MCMC-92 Proceedings, IEEE Computer Society
	Press.
	TDB:Stackable Circuit Card Packaging
	within a Logic Cage, IBM Technical
EE10	Disclosure
EETO	Bulletin, Dec. 1992, https://www.delphion.co
	m/tbds/tdb?o=92A%2063485,last visited
	Mar.8,2005
EE11	Jeff Hechi, The Laser Guidebook, 2nd
EE11	ed.,McGraw Hill,Inc.,1992

## Claim Chart for Claim 171 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical
A2	USP2,899,669	module comprising a laser diode module to convert
A3	USP3,264,601	a laser diode electrical signal into a laser diode
A4	USP3,332,860	optical signal and transmit the laser diode optical
A5	USP3,474,380	signal, which is transmitted at a data transmission
A6	USP3,497,866	rate of 1000 Mbits/s or more.
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
A14	USP3,805,116	A14 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical
A16	USP3,976,877	module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Bl	USP3,990,761	B1 through B3 do not disclose, at least, an optical
B2	USP4,047,242	module comprising a laser diode module to convert
B3		a laser diode electrical signal into a laser diode
	LISDA 156 002	optical signal and transmit the laser diode optical
	USP4,156,903	signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
B4		B4 does not disclose, at least, an optical module
	1 11824 161 630	comprising a laser diode electrical signal converter
		to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical
B6	USP4,176,897	module comprising a laser diode module to convert

B7		a laser diode electrical signal into a laser diode
	USP4,217,019	optical signal and transmit the laser diode optical
	,	signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
B8		B8 does not disclose, at least, an optical module
	USP4,217,488	comprising a laser diode electrical signal converter
	0014,217,100	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical
B10		module comprising a laser diode module to convert
		a laser diode electrical signal into a laser diode
	USP4,234,968	optical signal and transmit the laser diode optical
l		signal, which is transmitted at a data transmission
1		rate of 1000 Mbits/s or more.
B11	USP4,249,266	B11 through B13 do not disclose, at least, an
B12	USP4,252,402	optical module comprising a laser diode electrical
B13		signal converter to convert serial data, received
	USP4,257,124	from a motherboard, into a laser diode electrical
		signal.
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical
B15		module comprising a laser diode module to convert
		a laser diode electrical signal into a laser diode
	USP4,273,413	optical signal and transmit the laser diode optical
		signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
B16		B16 does not disclose, at least, an optical module
	HOD4 076 676	comprising a laser diode electrical signal converter
	USP4,276,656	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
	I	

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
C2	USP4,295,181	C2 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical

C4		module comprising a single circuit heard mounting
C4		module comprising a single circuit board mounting
	USP4,330,870	thereon a serial connector, a laser diode electrical signal converter and a second converter to convert a
		voltage signal to serial data.  C5 does not disclose, at least, an optical module
C5		
ļ		comprising a laser diode module to convert a laser
	USP4,345,808	diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
00		C6 does not disclose, at least, an optical module
C6		
	HODA 247 (55	comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal
	USP4,347,655	converter and a second converter to convert a
07		voltage signal to serial data.  C7 does not disclose, at least, an optical module
C7		comprising a laser diode electrical signal converter
	USP4,357,606	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
<u> </u>		C8 does not disclose, at least, an optical module
C8		comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
	USP4,360,248	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
C9		C9 does not disclose, at least, an optical module
	HCD4 266 565	comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal
	USP4,366,565	converter and a second converter to convert a
C10	USD4 260 404	voltage signal to serial data.  C10 through C15 do not disclose, at least, an
C10	USP4,369,494	optical module comprising a laser diode module to
C11	USP4,380,360	convert a laser diode electrical signal into a laser
C12	USP4,388,671	diode optical signal and transmit the laser diode
C13	USP4,393,516	optical signal, which is transmitted at a data
C14	USP4,398,073	transmission rate of 1000 Mbits/s or more.
C15	USP4,398,780	
C16		C16 does not disclose, at least, an optical module
	VIGD.4.000.552	comprising a single circuit board mounting thereon
	USP4,399,563	a serial connector, a laser diode electrical signal
		converter and a second converter to convert a
		voltage signal to serial data.

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser

		11. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical
D3	USP4,427,879	module comprising a laser diode electrical signal
D4	USP4,430,699	converter to convert serial data, received from a
	0314,430,077	motherboard, into a laser diode electrical signal.
D5		D5 doesnot disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	11004 424 527	diode electrical signal into a laser diode optical
	USP4,434,537	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
D6		D6 does not disclose, at least, an optical module
		comprising a laser diode electrical signal converter
	USP4,437,190	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
D7		D7 does not disclose, at least, an optical module
D,		comprising a single circuit board mounting thereon
	USP4,439,006	a serial connector, a laser diode electrical signal
	0314,437,000	converter and a second converter to convert a
- DO	Y/OD4 446 515	voltage signal to serial data.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical
D9	**************************************	module comprising a laser diode electrical signal
	USP4,449,244	converter to convert serial data, received from a
D10		motherboard, into a laser diode electrical signal.
D10	USP4,449,784	D10 through D13 do not disclose, at least, an
D11	USP4,453,903	optical module comprising a laser diode module to
D12	USP4,459,658	convert a laser diode electrical signal into a laser
D13		diode optical signal and transmit the laser diode
	USP4,461,537	optical signal, which is transmitted at a data
		transmission rate of 1000 Mbits/s or more.
D14		D14 does not disclose, at least, an optical module
	USP4,470,154	comprising a laser diode electrical signal converter
	001 1,170,131	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
D15		D15 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	11004 486 050	diode electrical signal into a laser diode optical
	USP4,486,059	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
D16		D16 does not disclose, at least, an optical module
- 10	USP4,493,113	comprising a laser diode electrical signal converter
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	to convert serial data, received from a motherboard,
	L	to convert sorial data, received from a monicional a,

into a laser diode electrical signal.	

Ref	Title	Distinction between reference(s) and claim(s)
E1		E1 does not disclose, at least, an optical module
	USP4,501,021	comprising a laser diode electrical signal converter
	001 4,501,021	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical
E3	USP4,505,035	module comprising a laser diode module to convert
E4	USP4,506,937	a laser diode electrical signal into a laser diode
E5		optical signal and transmit the laser diode optical
	USP4,510,553	signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
E6		E6 does not disclose, at least, an optical module
		comprising a single circuit board mounting thereon
	USP4,511,207	a serial connector, a laser diode electrical signal
		converter and a second converter to convert a
		voltage signal to serial data.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical
E8	USP4,516,204	module comprising a laser diode module to convert
E9	USP4,519,670	a laser diode electrical signal into a laser diode
E10	USP4,519,672	optical signal and transmit the laser diode optical
E11	USP4,519,673	signal, which is transmitted at a data transmission
E12	USP4,522,463	rate of 1000 Mbits/s or more.
E13	USP4,526,438	
E14	USP4,526,986	
E15		E15 does not disclose, at least, an optical module
	USP4,527,286	comprising a laser diode electrical signal converter
	001 4,527,200	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
E16		E16 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	USP4,529,266	diode electrical signal into a laser diode optical
	001,527,200	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical
F2	USP4,531,810	module comprising a laser diode module to convert
F3	USP4,533,208	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

F4	USP4,533,209	F4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical
F6	USP45,34,617	module comprising a laser diode module to convert
F7	USP4,535,233	a laser diode electrical signal into a laser diode
F8		optical signal and transmit the laser diode optical
	USP4,537,468	signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
F9	USP4,539,476	F9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical
F11	USP4,540,246	module comprising a laser diode module to convert
F12	USP4,541,036	a laser diode electrical signal into a laser diode
F13	USP4,541,685	optical signal and transmit the laser diode optical
F14	USP4,542,076	signal, which is transmitted at a data transmission
F15	USP4,544,231	rate of 1000 Mbits/s or more.
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical
G3	USP4,545,077	module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and a second converter to convert a voltage signal to serial data.
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical
G5	USP4,545,643	module comprising a laser diode module to convert
G6	USP4,545,644	a laser diode electrical signal into a laser diode
G7	USP4,545,645	optical signal and transmit the laser diode optical
G8	USP4,548,465	signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
G9	USP4,548,466	G9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G10	USP4,548,467	G10 does not disclose, at least, an optical module

		comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
G11	USP4,549,782	G11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an
G13	USP4,550,975	optical module comprising a laser diode module to
G14	USP4,553,811	convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
G15	USP4,553,813	G15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G16	USP4,553,814	G16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical
H2	USP4,556,281	module comprising a laser diode module to convert
H3	USP4,556,282	a laser diode electrical signal into a laser diode
H4	USP4,557,551	optical signal and transmit the laser diode optical
H5	USP4,560,234	signal, which is transmitted at a data transmission
Н6	USP4,563,057	rate of 1000 Mbits/s or more.
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an
H13	USP4,588,256	optical module comprising a laser diode module to
H14	USP4,589,728	convert a laser diode electrical signal into a laser

H15	USP4,597,631	diode optical signal and transmit the laser diode
H16	USP4,614,836	optical signal, which is transmitted at a data
	USF4,014,030	transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module
I2		comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
	USP4,634,239	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
I3		I3 does not disclose, at least, an optical module
		comprising a single circuit board mounting thereon
	USP4,641,371	a serial connector, a laser diode electrical signal
		converter and a second converter to convert a
7.4		voltage signal to serial data.
<u>I4</u>	USP4,647,148	I4 through I16 do not disclose, at least, an optical
I5	USP4,652,976	module comprising a laser diode module to convert
<u>I6</u>	USP4,663,240	a laser diode electrical signal into a laser diode
I7	USP4,663,603	optical signal and transmit the laser diode optical
18	USP4,678,264	signal, which is transmitted at a data transmission
I9	USP4,679,883	rate of 1000 Mbits/s or more.
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical
J2	USP4,762,388	module comprising a laser diode module to convert
Ј3	USP4,767,179	a laser diode electrical signal into a laser diode
J4	USP4,772,931	optical signal and transmit the laser diode optical
J5	USP4,779,952	signal, which is transmitted at a data transmission
J6	USP4,789,218	rate of 1000 Mbits/s or more.
J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	

J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
K1		K1 does not disclose, at least, an optical module
	USP4,840,451	comprising a laser diode electrical signal converter to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
K2		K2 does not disclose, at least, an optical module
K2		comprising a single circuit board mounting thereon
	USP4,844,581	a serial connector, a laser diode electrical signal
		converter and a second converter to convert a
		voltage signal to serial data.
K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical
K4	USP4,847,771	module comprising a laser diode module to convert
K5	USP4,849,944	a laser diode electrical signal into a laser diode
K6	USP4,857,002	optical signal and transmit the laser diode optical
K7	USP4,862,327	signal, which is transmitted at a data transmission
K8	USP4,872,212	rate of 1000 Mbits/s or more.
K9	USP4,872,736	
K10		K10 does not disclose, at least, an optical module
	USP4,881,789	comprising a laser diode electrical signal converter
	031 1,001,707	to convert serial data, received from a motherboard,
	4-2	into a laser diode electrical signal.
K11		K11 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	USP4,884,336	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
K12		K12 does not disclose, at least, an optical module
1112		comprising a laser diode electrical signal converter
	USP4,897,711	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an
K14	USP4,927,225	optical module comprising a laser diode module to
K15	USP4,944,568	convert a laser diode electrical signal into a laser
K16		diode optical signal and transmit the laser diode
	USP4,945,448	optical signal, which is transmitted at a data
		transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical
L2	USP4,955,817	module comprising a laser diode module to convert
L3	USP4,963,104	a laser diode electrical signal into a laser diode
L4	USP4,967,312	optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical
L7	USP4,979,794	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical
L9	USP4,989,934	module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical
L11	USP4,991,062	module comprising a laser diode module to convert
L12	USP5,002,495	a laser diode electrical signal into a laser diode
L13	USP5,004,434	optical signal and transmit the laser diode optical
L14	USP5,006,286	signal, which is transmitted at a data transmission
L15	USP5,011,425	rate of 1000 Mbits/s or more.
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical
M2	USP5,035,641	module comprising a laser diode module to convert
M3	USP5,040,993	a laser diode electrical signal into a laser diode
M4		optical signal and transmit the laser diode optical
	USP5,041,025	signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an
M7	USP5,045,635	optical module comprising a laser diode module to
M8	USP5,045,971	convert a laser diode electrical signal into a laser

M9	USP5,046,955	diode optical signal and transmit the laser diode
M10	USP5,060,373	optical signal, which is transmitted at a data
M11	USP5,071,219	transmission rate of 1000 Mbits/s or more.
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
N2	USP5,093,879	N2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical
N4	USP5,101,463	module comprising a laser diode module to convert
N5	USP5,104,243	a laser diode electrical signal into a laser diode
N6	USP5,107,404	optical signal and transmit the laser diode optical
N7	USP5,108,294	signal, which is transmitted at a data transmission
N8	USP5,109,453	rate of 1000 Mbits/s or more.
N9	USP5,113,467	N9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N10	USP5,116,239	N10 thorugh N14 do not disclose, at least, an
N11	USP5,117,476	optical module comprising a laser diode module to
N12	USP5,118,362	convert a laser diode electrical signal into a laser
N13	USP5,118,904	diode optical signal and transmit the laser diode
N14	USP5,120,578	optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
N15	USP5,122,893	N15 does not disclose, at least, an optical module

		comprising a laser diode electrical signal converter to convert serial data, received from a motherboard,
774.6		into a laser diode electrical signal.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical
N17		module comprising a laser diode module to convert a laser diode electrical signal into a laser diode
	USP5,125,849	optical signal and transmit the laser diode optical
		signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
N18		N18 does not disclose, at least, an optical module
	USP5,127,071	comprising a laser diode electrical signal converter
	031 3,127,071	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
N19	USP5,132,871	N19 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
01	USP5,134,677	O1 through O3 do not disclose, at least, an optical
O2	USP5,134,679	module comprising a laser diode module to convert
03		a laser diode electrical signal into a laser diode
	USP5,136,063	optical signal and transmit the laser diode optical
	03F3,130,003	signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
04	USP5,136,152	O4 and O5 do not disclose, at least, an optical
O5		module comprising a laser diode electrical signal
	USP5,136,603	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
06	USP5,138,537	O6 through O8 do not disclose, at least, an optical
O7	USP5,138,678	module comprising a laser diode module to convert
O8		a laser diode electrical signal into a laser diode
	USP5,140,663	optical signal and transmit the laser diode optical
	0313,140,003	signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
09	USP5,155,786	O9 and O10 do not disclose, at least, an optical
O10		module comprising a laser diode electrical signal
	USP5,157,769	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
O11	"	O11 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	USP5,167,139	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of

		1000 Mbits/s or more.
O12	USP5,168,537	O12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an
014	USP5,171,167	optical module comprising a laser diode module to
015	USP5,173,059	convert a laser diode electrical signal into a laser
016	USP5,183,404	diode optical signal and transmit the laser diode
017	USP5,183,405	optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical
P2	USP5,202,536	module comprising a laser diode module to convert
P3	USP5,207,597	a laser diode electrical signal into a laser diode
P4		optical signal and transmit the laser diode optical
	USP5,212,752	signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
P5		P5 does not disclose, at least, an optical module
	USP5,212,754	comprising a laser diode electrical signal converter
	0010,212,701	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical
P7	USP5,225,760	module comprising a laser diode module to convert
P8	USP5,233,676	a laser diode electrical signal into a laser diode
P9	USP5,233,674	optical signal and transmit the laser diode optical
P10	USP5,234,353	signal, which is transmitted at a data transmission
P11	USP5,238,426	rate of 1000 Mbits/s or more.
P12		P12 does not disclose, at least, an optical module
	USP5,241,614	comprising a laser diode electrical signal converter
		to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
P13		P13 does not disclose, at least, an optical module
		comprising a single circuit board mounting thereon
	USP5,247,532	a serial connector, a laser diode electrical signal
		converter and a second converter to convert a
D14	HODE 250 052	voltage signal to serial data.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical
P15	USP5,259,054	module comprising a laser diode module to convert
P16		a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical
	USP5,262,923	signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
P17	USP5,271,079	P17 does not disclose, at least, an optical module
LI/	031 3,271,073	1 17 does not disclose, at least, an optical module

comprising a laser diode electrical signal converter
to convert serial data, received from a motherboard,
into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Q1		Q1 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	USP5,274,729	diode electrical signal into a laser diode optical
	031 3,274,727	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
Q2		Q2 does not disclose, at least, an optical module
	USP5,285,466	comprising a laser diode electrical signal converter
	0.01.0,200,100	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
Q3		Q3 doesnot disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	USP5,285,511	diode electrical signal into a laser diode optical
:		signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
	<del></del>	1000 Mbits/s or more.
Q4		Q4 does not disclose, at least, an optical module
	USP5,285,512	comprising a laser diode electrical signal converter
	, ,	to convert serial data, received from a motherboard,
05	Hens 206 207	into a laser diode electrical signal.  Q5 through Q16 do not disclose, at least, an optical
Q5	USP5,286,207	module comprising a laser diode module to convert
Q6	USP5,286,247	a laser diode electrical signal into a laser diode
Q7	USP5,288,247	optical signal and transmit the laser diode optical
Q8 Q9	USP5,289,347	signal, which is transmitted at a data transmission
Q10	USP5,296,813 USP5,299,089	rate of 1000 Mbits/s or more.
Q10 Q11	USP5,304,069	
Q11	USP5,305,182	_
Q12	USP5,311,408	-
Q13	USP5,315,679	
Q14 Q15	USP5,317,663	-
<del></del>	USP5,321,819	-
Q16	USF3,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical
R2	USP5,333,221	module comprising a laser diode module to convert

D 2		a laser diode electrical signal into a laser diode
R3		optical signal and transmit the laser diode optical
1	USP5,333,225	signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
		The second secon
R4		R4 does not disclose, at least, an optical module
	USP5,337,391	comprising a laser diode electrical signal converter
	, , , , , , , , , , , , , , , , , , , ,	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical
R6		module comprising a laser diode module to convert
		a laser diode electrical signal into a laser diode
	USP5,340,340	optical signal and transmit the laser diode optical
		signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical
R8		module comprising a laser diode electrical signal
	USP5,345,530	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
R9		R9 does not disclose, at least, an optical module
		comprising a single circuit board mounting thereon
1	USP5,353,364	a serial connector, a laser diode electrical signal
		converter and a second converter to convert a
		voltage signal to serial data.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an
R11	USP5,356,300	optical module comprising a laser diode module to
R12		convert a laser diode electrical signal into a laser
1012	USP5,357,402	diode optical signal and transmit the laser diode
		optical signal, which is transmitted at a data
		transmission rate of 1000 Mbits/s or more.
R13		R13 does not disclose, at least, an optical module
****		comprising a laser diode electrical signal converter
	USP5,361,244	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an
R15	USP5,366,664	optical module comprising a laser diode module to
R16	051 3,300,004	convert a laser diode electrical signal into a laser
KIU		diode optical signal and transmit the laser diode
	USP5,372,515	optical signal, which is transmitted at a data
		transmission rate of 1000 Mbits/s or more.
L		transmission rate of 1000 prioris/s of more.

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical
S2	USP5,383,793	module comprising a laser diode module to convert
S3	USP5,388,995	a laser diode electrical signal into a laser diode
S4	USP5,390,268	optical signal and transmit the laser diode optical

LICDS 202 240	signal, which is transmitted at a data transmission
	rate of 1000 Mbits/s or more.
	rate of 1000 Mibits/s or more.
	_
USP5,398,295	
USP5,408,384	
	S10 does not disclose, at least, an optical module
NODE 414 707	comprising a laser diode electrical signal converter
USP3,414,787	to convert serial data, received from a
	motherboard, into a laser diode electrical signal.
	S11 does not disclose, at least, an optical module
	comprising a laser diode module to convert a laser
	diode electrical signal into a laser diode optical
USP5,416,668	signal and transmit the laser diode optical signal,
	which is transmitted at a data transmission rate of
	1000 Mbits/s or more.
	S12 does not disclose, at least, an optical module
USP5,416,870	comprising a laser diode electrical signal converter
	, ,
	to convert serial data, received from a
	motherboard, into a laser diode electrical signal.
	S13 through S16 do not disclose, at least, an optical
USP5,419,717	module comprising a laser diode module to convert
USP5,424,573	a laser diode electrical signal into a laser diode
USP5,428,703	optical signal and transmit the laser diode optical
	signal, which is transmitted at a data transmission
	rate of 1000 Mbits/s or more.
	USP5,414,787  USP5,416,668  USP5,416,870  USP5,416,872  USP5,419,717  USP5,424,573

Ref	Title	Distinction between reference(s) and claim(s)
T1		T1 does not disclose, at least, an optical module
	USP5,428,704	comprising a laser diode electrical signal converter
	051 3,426,704	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical
T3		module comprising a laser diode module to convert
		a laser diode electrical signal into a laser diode
	USP5,443,390	optical signal and transmit the laser diode optical
		signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
T4		T4 does not disclose, at least, an optical module
	USP5,446,814	comprising a laser diode electrical signal converter
		to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
T5	USP5,452,387	This reference does not qualify as prior art.
		Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.

Т6	USP5,454,080	T6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
T7	USP5,455,703	T7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical
Т9	USP5,469,332	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
T10	USP5,470,257	These references do not qualify as prior art.
T11	USP5,470,259	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T12	USP5,475,734	T12 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
T13	USP5,477,418	These references do not qualify as prior art.
T14	USP5,478,253	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical
T16	USP5,478,260	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
U2	USP5,482,658	U2 does not disclose, at least, an optical module

		somericine a larger diada alastrical giangl convertor
		comprising a laser diode electrical signal converter
		to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical
U4		module comprising a laser diode module to convert
		a laser diode electrical signal into a laser diode
	USP5,491,613	optical signal and transmit the laser diode optical
		signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
U5		This reference does not qualify as prior art.
	   LISDS 401 712	Applicants have claimed priority to Japanese
1	USP5,491,712	Application No. 06-086691, filed on April 25,
		1994, in Japan.
U6		U6 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	NODE 404 747	diode electrical signal into a laser diode optical
	USP5,494,747	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
	·	1000 Mbits/s or more.
U7		This reference does not qualify as prior art.
		Applicants have claimed priority to Japanese
	USP5,499,311	Application No. 06-086691, filed on April 25,
		1994, in Japan.
U8		U8 does not disclose, at least, an optical module
	110D5 400 212	comprising a laser diode electrical signal converter
	USP5,499,312	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
U9		This reference does not qualify as prior art.
		Applicants have claimed priority to Japanese
	USP5,504,657	Application No. 06-086691, filed on April 25,
		1994, in Japan.
U10		U10 does not disclose, at least, an optical module
	vans 506 001	comprising a laser diode electrical signal converter
	USP5,506,921	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an
U12	USP5,507,668	optical module comprising a laser diode module to
U13	USP5,526,235	convert a laser diode electrical signal into a laser
U14		diode optical signal and transmit the laser diode
	USP5,527,991	optical signal, which is transmitted at a data
		transmission rate of 1000 Mbits/s or more.
U15	USP5,534,662	This reference does not qualify as prior art.
U16		Applicants have claimed priority to Japanese
	USP5,535,296	Application No. 06-086691, filed on April 25,
		1994, in Japan.
		Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25,

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
V2	USP5,545,845	These references do not qualify as prior art.
V3	USP5,546,281	Applicants have claimed priority to Japanese
V4	USP5,547,385	Application No. 06-086691, filed on April 25, 1994, in Japan.
V5	USP5,548,641	V5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical
V8	USP5,554,037	module comprising a laser diode module to convert
V9	USP5,567,167	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
V10	USP5,577,064	V10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
V11	USP5,580,269	V11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical

V14	USP5,599,595	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art.
W2	USP5,631,998	Applicants have claimed priority to Japanese
W3	NODE (52 50)	Application No. 06-086691, filed on April 25,
	USP5,653,596	1994, in Japan.
W4		W4 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	HODE 650 450	diode electrical signal into a laser diode optical
	USP5,659,459	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
W5	USP5,675,428	These references do not qualify as prior art.
W6	USP5,687,267	Applicants have claimed priority to Japanese
W7	USP5,717,533	Application No. 06-086691, filed on April 25,
W8	USP5,724,729	1994, in Japan.
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	]
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art.
X2	USP5,879,173	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical

X4	EP 0 232792 A1	module comprising a laser diode module to convert
X5	EP.0 228 278	a laser diode electrical signal into a laser diode
X6	B1.0 220 270	optical signal and transmit the laser diode optical
710	EP.0 305112 A2	signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical
X8		module comprising a laser diode electrical signal
110	EP.0 413 489 A2	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
X9		X9 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	TT 0.407.161.40	diode electrical signal into a laser diode optical
	EP.0 437 161 A2	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
X10		X10 does not disclose, at least, an optical module
	EP.0 456 298 B1	comprising a laser diode electrical signal converter
	EP.0 436 298 B1	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
X11		X11 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	EP.0 530 791 A2	diode electrical signal into a laser diode optical
	EF.0 330 791 A2	signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an
X13	EP.0 588 014 A2	optical module comprising a laser diode electrical
X14		signal converter to convert serial data, received
	EP.0 600 645 A1	from a motherboard, into a laser diode electrical
		signal.
X15		X15 does not disclose, at least, an optical module
		comprising a single circuit board mounting thereon
	EP.0 613 032 A2	a serial connector, a laser diode electrical signal
		converter and a second converter to convert a
	-	voltage signal to serial data.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an
X17	EP.0 656 696 A1	optical module comprising a laser diode module to
X18		convert a laser diode electrical signal into a laser
	EP.0 662 259 B1	diode optical signal and transmit the laser diode
		optical signal, which is transmitted at a data
		transmission rate of 1000 Mbits/s or more.
X19		X19 does not disclose, at least, an optical module
	EP.442 608 A2	comprising a laser diode electrical signal converter
		to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical

X21		module comprising a laser diode module to convert
		a laser diode electrical signal into a laser diode
	JP.1-237783	optical signal and transmit the laser diode optical
	- -	signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
<u>Y1</u>	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical
<u>Y2</u>	JP.2-181710	module comprising a laser diode electrical signal
Y3	JP.2-278212	converter to convert serial data, received from a
Y4	JP.2-87837	motherboard, into a laser diode electrical signal.
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical
Y6	JP.3-94869	module comprising a laser diode module to convert
Y7		a laser diode electrical signal into a laser diode
i i	JP.4-109593	optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
<u>Y8</u>	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical
Y9	JP.4-165312	module comprising a laser diode electrical signal
Y10		converter to convert serial data, received from a
	JP.4-211208	motherboard, into a laser diode electrical signal.
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an
Y12	JP.4-229962	optical module comprising a laser diode module to
Y13		convert a laser diode electrical signal into a laser
	JP.4-230978	diode optical signal and transmit the laser diode
	31.4-230976	optical signal, which is transmitted at a data
		transmission rate of 1000 Mbits/s or more.
Y14		Y14 does not disclose, at least, an optical module
	JP.4-234715	comprising a laser diode electrical signal converter
	V. V. 25 V. 25	to convert serial data, received from a
1115		motherboard, into a laser diode electrical signal.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an
Y16	JP.4-50901	optical module comprising a laser diode module to
Y17	JP.4-87809	convert a laser diode electrical signal into a laser
Y18	ID 6 050000	diode optical signal and transmit the laser diode
	JP.5-052802	optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
Y19		Y19 does not disclose, at least, an optical module
119	JP.5-134147	comprising a laser diode electrical signal converter
		to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
L		modicioodia, into a laser aloue electrical signar.

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical

Z2		module comprising a laser diode electrical signal
<b>Z</b> 2	ID 5 100050	converter to convert serial data, received from a
	JP.5-188250	
770		motherboard, into a laser diode electrical signal.
Z3		Z3 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
	JP.5-211379	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal,
		which is transmitted at a data transmission rate of
		1000 Mbits/s or more.
Z4		Z4 does not disclose, at least, an optical module
}	JP.5-218581	comprising a laser diode electrical signal converter
		to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
_Z5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical
Z6	JP.5-70955	module comprising a laser diode module to convert
Z7	JP.61-158046	a laser diode electrical signal into a laser diode
Z8		optical signal and transmit the laser diode optical
	JP.61-188385	signal, which is transmitted at a data transmission
		rate of 1000 Mbits/s or more.
Z9		Z9 does not disclose, at least, an optical module
		comprising a single circuit board mounting thereon
	JP.63-009325	a serial connector, a laser diode electrical signal
		converter and a second converter to convert a
		voltage signal to serial data.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an
Z11	JP.63-65967	optical module comprising a laser diode module to
Z12	JP.63-65978	convert a laser diode electrical signal into a laser
Z13	JP.63-82998	diode optical signal and transmit the laser diode
Z14	U-3-20458	optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
Z15	U-3-94869	transmission rate or root withis/s or more.
Z16	U-4-87809	_
Z17	U-5-052802	_
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AAl	U-61-188385	AA1 through AA5 do not disclose, at least, an
AA2	U-63-16496	optical module comprising a laser diode module to
AA3	U-63-65967	convert a laser diode electrical signal into a laser
AA4	U-63-65978	
AA5	U-63-82998	diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
BB2	Ronald LSoderstrom et al.,"An optical Date Link using a CD laser", SPIE Vol. 1577 High Speed Fiber Networks and Channels, pp. 163-173, 1991	BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode electrical
BB3	BCP,Inc."Gigabits Over Multimode Optical Fiber"no date	signal converter to convert serial data, received
BB4	Ronald L.Soderstrom et al., "CD laser optical Date Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	from a motherboard, into a laser diode electrical signal.
BB5	FDDI Low-Cost Fiber Phyiscal Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	BB5 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and a second converter to convert a voltage signal to serial data.
BB6	HP Module HFBR-5103, FDDI Data Sheet,http://www.hp.com/HP- COMP/fiber/hfbr5103.html,Jun.11,1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module to convert
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System".www.patents.ibm.com/tdbs/tdb?ℴ=93A +60964,April 1993	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
BB8	IBM, "A Proposal for a New High Performance "OptopElectronics Enterprise Oct. 1992 ANSI Meeting, Oct. 13, 1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode electrical signal
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	BB10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver",Electronic Engineering Times,Aug.1993.	BB11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of

as prior art. y to Japanese
ed on April 25,
se, at least, an
ser diode electrical al data, received
r diode electrical
i diode ciccincai
an optical module
e to convert a laser
er diode optical
ode optical signal,
ansmission rate of
an optical module
cal signal converter
from a motherboard,
al. at least, an optical
e module to convert
to a laser diode
aser diode optical
data transmission
t, an optical module
cal signal converter
from a motherboard,
ıal.
t, an optical module
e to convert a laser
er diode optical ode optical,
ansmission rate of
ansimission face of

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conducive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode module to
DD2	HEADS UpSumitomo Electric Lightwave joins Other in Announcement,May 11,1995	convert a laser diode electrical signal into a laser
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

DD4	Shortwave Opto Assembly, IBM OptoElectronic	DD4 and DD5 do not disclose, at least, an optical
DD4	Enterprises; IBM/OEE Market Survey Only, Rev.1,Jan.6,1993	module comprising a laser diode electrical signal
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge", IBM Technical Disclosure Bulletin, vol. 29	converter to convert serial data, received from a
DD3	No. 10. Mar., 1987	motherboard, into a laser diode electrical signal.
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.	DD6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
DD7	Ronald LSoderstrom et al., A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD) FOC/LAN 87&MFOC-WEST,pp.383-385,no date.	DD7 through DD9 do not disclose, at least, an optical module comprising a laser diode electrical
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
DD9	Ronald L.Soderstrom et al., Optical Components and Electronic Packaging for High Performance Optical Date Links, THE RESEARCH INVESTMENT, p. 19-28 (no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and a second converter to convert a voltage signal to serial data.
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD), American National Standards Institute, 1996.	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber, Van Nostrand Reinhold Publishing, 1983	diode optical signal and transmit the laser diode optical signal, which is transmitted at a data
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	transmission rate of 1000 Mbits/s or more.
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer date links", Fiber Optic Datacom and Computer Networks, SPIE-The International Society for Optical Engineerdings, Vol. 1577, pp. 174-181, 1988	

	David A.Knodel et al.,"Open Fibre
	Control,a laser safety interlock
	technique", High-Speed Fiber Networks and
EE5	Channels, SPIE-The International Society
	for Optical Engineering
	Proceedings, Vol. 991, pp. 179-182, 1992
	"IBM Technical Disclosure Bulletin,
EE6	Electrostatic Dissipative Enclosed
	Connector", Vol.34, No.7B, Dec.1991
	"High Reliability SW Laser For Optical Data Links",
EE7	LEOS '93 Conference Proceedings, IEEE Lasers and
	Electro-Optics Society 1993 Annual Meeting;
	Minimizing Electrostatic Discharge to a Cartridge IBM Technical Disclosure Bulletin, March
EE8	1987,https://www.delphion.com/tdb?o=87A%2060509
ļ	,last visited Mar.8,2005.
	K.P.Jackson et al.,"High-Density, Array, Optical
EE9	Interconnects for Multi-Chip Module Conference
227	MCMC-92 Proceedings, IEEE Computer Society Press.
	TDB:Stackable Circuit Card Packaging
	within a Logic Cage, IBM Technical
	Disclosure
EE10	
	Bulletin, Dec. 1992, https://www.delphion.co
	m/tbds/tdb?o=92A%2063485,last visited
	Mar.8,2005
EE11	Jeff Hechi, The Laser Guidebook, 2nd
	ed.,McGraw Hill,Inc.,1992

## Claim Chart for Claims 172-175 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical
A2	USP2,899,669	module comprising a laser diode module to convert
A3	USP3,264,601	a laser diode electrical signal into a laser diode
A4	USP3,332,860	optical signal and transmit the laser diode optical
A5	USP3,474,380	signal.
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
A14	USP3,805,116	A14 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical
A16	USP3,976,877	module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical
B2	USP4,047,242	module comprising a laser diode module to convert
B3		a laser diode electrical signal into a laser diode
	USP4,156,903	optical signal and transmit the laser diode optical
		signal.
B4		B4 does not disclose, at least, an optical module
	USP4,161,650	comprising a laser diode electrical signal converter
	0314,101,030	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical
B6	USP4,176,897	module comprising a laser diode module to convert
B7		a laser diode electrical signal into a laser diode
	USP4,217,019	optical signal and transmit the laser diode optical
		signal.
B8	USP4,217,488	B8 does not disclose, at least, an optical module
	USF 4,217,400	comprising a laser diode electrical signal converter

		to convert serial data, received from a motherboard, into a laser diode electrical signal.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical
B10	USP4,234,968	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B11	USP4,249,266	B11 through B13 do not disclose, at least, an
B12	USP4,252,402	optical module comprising a laser diode electrical
B13	USP4,257,124	signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical
B15	USP4,273,413	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B16	USP4,276,656	B16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
C2	USP4,295,181	C2 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical
C4	USP4,330,870	module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
C5	USP4,345,808	C5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C6	USP4,347,655	C6 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal

		converter are mounted, and to which a laser diode
		module and photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
C7		C7 does not disclose, at least, an optical module
	USP4,357,606	comprising a laser diode electrical signal converter
	051 1,557,000	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
C8		C8 does not disclose, at least, an optical module
	USP4,360,248	comprising a laser diode module to convert a laser
	0314,300,246	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
C9		C9 does not disclose, at least, an optical module
		comprising a single circuit board on which a serial
		connector and a laser diode electrical signal
	USP4,366,565	converter are mounted, and to which a laser diode
		module and photo diode module are electrically
1		connected proximate to a first edge of the circuit
		board.
C10	USP4,369,494	C10 through C15 do not disclose, at least, an
C11	USP4,380,360	optical module comprising a laser diode module to
C12	USP4,388,671	convert a laser diode electrical signal into a laser
C13	USP4,393,516	diode optical signal and transmit the laser diode
C14	USP4,398,073	optical signal.
C15	USP4,398,780	
C16		C16 does not disclose, at least, an optical module
		comprising a single circuit board on which a serial
1		connector and a laser diode electrical signal
	USP4,399,563	converter are mounted, and to which a laser diode
		module and photo diode module are electrically
		connected proximate to a first edge of the circuit
-		board.

Ref	Title	Distinction between reference(s) and claim(s)
D1		D1 does not disclose, at least, an optical module
	USP4,408,273	comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
	_	signal and transmit the laser diode optical signal.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical
D3	USP4,427,879	module comprising a laser diode electrical signal
D4	HSD4 420 600	converter to convert serial data, received from a
	USP4,430,699	motherboard, into a laser diode electrical signal.
D5		D5 does not disclose, at least, an optical module
	USP4,434,537	comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical

		signal and transmit the laser diode optical signal.
D6		D6 does not disclose, at least, an optical module
	USP4,437,190	comprising a laser diode electrical signal converter
		to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
D7		D7 does not disclose, at least, an optical module
		comprising a single circuit board on which a serial
Ì		connector and a laser diode electrical signal
	USP4,439,006	converter are mounted, and to which a laser diode
		module and photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical
D9		module comprising a laser diode electrical signal
	USP4,449,244	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
D10	USP4,449,784	D10 through D13 do not disclose, at least, an
D11	USP4,453,903	optical module comprising a laser diode module to
D12	USP4,459,658	convert a laser diode electrical signal into a laser
D13	USP4,461,537	diode optical signal and transmit the laser diode
	031 4,401,337	optical signal.
D14		D14 does not disclose, at least, an optical module
	USP4,470,154	comprising a laser diode electrical signal converter
		to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
D15		D15 does not disclose, at least, an optical module
LISP4 486 059	USP4,486,059	comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
<u> </u>		signal and transmit the laser diode optical signal.
D16		D16 does not disclose, at least, an optical module
	USP4,493,113	comprising a laser diode electrical signal converter
		to convert serial data, received from a motherboard,
		into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical
E3	USP4,505,035	module comprising a laser diode module to convert
E4	USP4,506,937	a laser diode electrical signal into a laser diode
E5	USP4,510,553	optical signal and transmit the laser diode optical signal.
E6	USP4,511,207	E6 does not disclose, at least, an optical module

		comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical
E8	USP4,516,204	module comprising a laser diode module to convert
E9	USP4,519,670	a laser diode electrical signal into a laser diode
E10	USP4,519,672	optical signal and transmit the laser diode optical
E11	USP4,519,673	signal.
E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	E15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
E16	USP4,529,266	E16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical
F2	USP4,531,810	module comprising a laser diode module to convert
F3		a laser diode electrical signal into a laser diode
	USP4,533,208	optical signal and transmit the laser diode optical
		signal.
F4		F4 does not disclose, at least, an optical module
ĺ	USP4,533,209	comprising a laser diode electrical signal converter
	(323,20)	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
F5_	USP4,534,616	F5 through F8 do not disclose, at least, an optical
F6	USP45,34,617	module comprising a laser diode module to convert
F7	USP4,535,233	a laser diode electrical signal into a laser diode
F8   11CD4 527 469	USP4,537,468	optical signal and transmit the laser diode optical
	031 4,337,408	signal.
F9		F9 does not disclose, at least, an optical module
	USP4,539,476	comprising a laser diode electrical signal converter
	0314,339,470	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical
F11	USP4,540,246	module comprising a laser diode module to convert
F12	USP4,541,036	a laser diode electrical signal into a laser diode

F13	USP4,541,685	optical signal and transmit the laser diode optical
F14	USP4,542,076	signal.
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical
G3	USP4,545,077	module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical
G5	USP4,545,643	module comprising a laser diode module to convert
G6	USP4,545,644	a laser diode electrical signal into a laser diode
G7	USP4,545,645	optical signal and transmit the laser diode optical
G8	USP4,548,465	signal.
G9	USP4,548,466	G9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G10	USP4,548,467	G10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G11	USP4,549,782	G11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an
G13	USP4,550,975	optical module comprising a laser diode module to
G14	USP4,553,811	convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G15	USP4,553,813	G15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G16	USP4,553,814	G16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser

diode electrical signal into a laser diode optical
signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical
H2	USP4,556,281	module comprising a laser diode module to convert
H3	USP4,556,282	a laser diode electrical signal into a laser diode
H4	USP4,557,551	optical signal and transmit the laser diode optical
H5	USP4,560,234	signal.
Н6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an
H13	USP4,588,256	optical module comprising a laser diode module to
H14	USP4,589,728	convert a laser diode electrical signal into a laser
H15	USP4,597,631	diode optical signal and transmit the laser diode
H16	USP4,614,836	optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module
I2	USP4,634,239	comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
I3	USP4,641,371	I3 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
I4	USP4,647,148	I4 through I16 do not disclose, at least, an optical
I5	USP4,652,976	module comprising a laser diode module to convert
I6	USP4,663,240	a laser diode electrical signal into a laser diode
I7	USP4,663,603	optical signal and transmit the laser diode optical
18	USP4,678,264	signal.
19	USP4,679,883	
I10	USP4,695,106	

I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical
J2	USP4,762,388	module comprising a laser diode module to convert
J3	USP4,767,179	a laser diode electrical signal into a laser diode
J4	USP4,772,931	optical signal and transmit the laser diode optical
J5	USP4,779,952	signal.
J6	USP4,789,218	
J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard,
K2	USP4,844,581	into a laser diode electrical signal.  K2 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical
K4	USP4,847,771	module comprising a laser diode module to convert
K5	USP4,849,944	a laser diode electrical signal into a laser diode

K6	USP4,857,002	optical signal and transmit the laser diode optical
K7	USP4,862,327	signal.
K8	USP4,872,212	]
K9	USP4,872,736	
K10	USP4,881,789	K10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K11	USP4,884,336	K11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
K12	USP4,897,711	K12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an
K14	USP4,927,225	optical module comprising a laser diode module to
K15	USP4,944,568	convert a laser diode electrical signal into a laser
K16	USP4,945,448	diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical
L2	USP4,955,817	module comprising a laser diode module to convert
L3	USP4,963,104	a laser diode electrical signal into a laser diode
L4	USP4,967,312	optical signal and transmit the laser diode optical signal.
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical
L7	USP4,979,794	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical
L9	USP4,989,934	module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical
L11	USP4,991,062	module comprising a laser diode module to convert
L12	USP5,002,495	a laser diode electrical signal into a laser diode
L13	USP5,004,434	optical signal and transmit the laser diode optical

L14	USP5,006,286	signal.
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical
M2	USP5,035,641	module comprising a laser diode module to convert
M3	USP5,040,993	a laser diode electrical signal into a laser diode
M4	USP5,041,025	optical signal and transmit the laser diode optical signal.
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an
M7	USP5,045,635	optical module comprising a laser diode module to
M8	USP5,045,971	convert a laser diode electrical signal into a laser
M9	USP5,046,955	diode optical signal and transmit the laser diode
M10	USP5,060,373	optical signal.
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
N1		N1 does not disclose, at least, an optical module
	USP5,091,991	comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
N2		N2 does not disclose, at least, an optical module
	USP5,093,879	comprising a laser diode electrical signal converter
		to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical
N4	USP5,101,463	module comprising a laser diode module to convert
N5	USP5,104,243	a laser diode electrical signal into a laser diode

N6	USP5,107,404	optical signal and transmit the laser diode optical
N7	USP5,108,294	signal.
N8	USP5,109,453	
N9	USP5,113,467	N9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an
N11	USP5,117,476	optical module comprising a laser diode module to
N12	USP5,118,362	convert a laser diode electrical signal into a laser
N13	USP5,118,904	diode optical signal and transmit the laser diode
N14	USP5,120,578	optical signal.
N15	USP5,122,893	N15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical
N17	USP5,125,849	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N19	USP5,132,871	N19 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
01	USP5,134,677	O1 through O3 do not disclose, at least, an optical
02	USP5,134,679	module comprising a laser diode module to convert
03		a laser diode electrical signal into a laser diode
	USP5,136,063	optical signal and transmit the laser diode optical
		signal.
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical
O5		module comprising a laser diode electrical signal
	USP5,136,603	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
06	USP5,138,537	O6 through O8 do not disclose, at least, an optical
07	USP5,138,678	module comprising a laser diode module to convert
08		a laser diode electrical signal into a laser diode
	USP5,140,663	optical signal and transmit the laser diode optical
		signal.
09	USP5,155,786	O9 and O10 do not disclose, at least, an optical

O10	LIGDS 157.7(0	module comprising a laser diode electrical signal converter to convert serial data, received from a
	USP5,157,769	motherboard, into a laser diode electrical signal.
011		O11 does not disclose, at least, an optical module
	USP5,167,139	comprising a laser diode module to convert a laser
	0883,107,139	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
012		O12 does not disclose, at least, an optical module
	110DE 170 E27	comprising a laser diode electrical signal converter
	USP5,168,537	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an
014	USP5,171,167	optical module comprising a laser diode module to
015	USP5,173,059	convert a laser diode electrical signal into a laser
016	USP5,183,404	diode optical signal and transmit the laser diode
017	USP5,183,405	optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical
P2	USP5,202,536	module comprising a laser diode module to convert
P3	USP5,207,597	a laser diode electrical signal into a laser diode
P4	USP5,212,752	optical signal and transmit the laser diode optical signal.
P5	USP5,212,754	P5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical
P7	USP5,225,760	module comprising a laser diode module to convert
P8	USP5,233,676	a laser diode electrical signal into a laser diode
P9	USP5,233,674	optical signal and transmit the laser diode optical
P10	USP5,234,353	signal.
P11	USP5,238,426	
P12	USP5,241,614	P12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
P13	USP5,247,532	P13 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical

P15	USP5,259,054	module comprising a laser diode module to convert
P16	USP5,262,923	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
P17	USP5,271,079	P17 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Q1		Q1 does not disclose, at least, an optical module
	USP5,274,729	comprising a laser diode module to convert a laser
	031 3,274,723	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
Q2		Q2 does not disclose, at least, an optical module
	USP5,285,466	comprising a laser diode electrical signal converter
	051 3,203, 100	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
Q3		Q3 does not disclose, at least, an optical module
	USP5,285,511	comprising a laser diode module to convert a laser
	0010,200,011	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
Q4		Q4 does not disclose, at least, an optical module
	USP5,285,512	comprising a laser diode electrical signal converter
		to convert serial data, received from a motherboard,
0.5	HCD7 207 207	into a laser diode electrical signal.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an optical
Q6	USP5,286,247	module comprising a laser diode module to convert
Q7	USP5,288,247	a laser diode electrical signal into a laser diode
Q8	USP5,289,347	optical signal and transmit the laser diode optical
Q9	USP5,296,813	signal.
Q10	USP5,299,089	
Q11	USP5,304,069	_
Q12	USP5,305,182	_
Q13	USP5,311,408	_{
Q14	USP5,315,679	_
Q15	USP5,317,663	_
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical
R2	USP5,333,221	module comprising a laser diode module to convert

R3	USP5,333,225	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R4	USP5,337,391	R4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical
R6	USP5,340,340	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical
R8	USP5,345,530	module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
R9	USP5,353,364	R9 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an
R11	USP5,356,300	optical module comprising a laser diode module to
R12	USP5,357,402	convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R13	USP5,361,244	R13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an
R15	USP5,366,664	optical module comprising a laser diode module to
R16	USP5,372,515	convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical
S2	USP5,383,793	module comprising a laser diode module to convert
S3	USP5,388,995	a laser diode electrical signal into a laser diode
S4	USP5,390,268	optical signal and transmit the laser diode optical
S5	USP5,393,249	signal.
S6	USP5,397,242	_

S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	S10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
S11	USP5,416,668	S11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical
S14	USP5,419,717	module comprising a laser diode module to convert
S15	USP5,424,573	a laser diode electrical signal into a laser diode
S16	USP5,428,703	optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical
Т3	USP5,443,390	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T4	USP5,446,814	T4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
Т6	USP5,454,080	T6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T7	USP5,455,703	T7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter

ım a
om a
ectrical signal.
t, an optical
module to convert
a laser diode
er diode optical
s prior art.
to Japanese
on April 25,
optical module
to convert a laser
diode optical
e optical signal.
s prior art.
to Japanese
on April 25,
east, an optical
module to convert
a laser diode
er diode optical

Ref	Title	Distinction between reference(s) and claim(s)
U1		U1 does not disclose, at least, an optical module
	1 1 1 2 0 5 /1 2 1 6 3 /1	comprising a laser diode module to convert a laser
	031 5,461,054	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
U2		U2 does not disclose, at least, an optical module
ļ	USP5,482,658	comprising a laser diode electrical signal converter
	031 3,462,036	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical
U4		module comprising a laser diode module to convert
	USP5,491,613	a laser diode electrical signal into a laser diode
	USF 3,491,013	optical signal and transmit the laser diode optical
		signal.
U5		This reference does not qualify as prior art.
	USP5,491,712	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser

		diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an
U12	USP5,507,668	optical module comprising a laser diode module to
U13	USP5,526,235	convert a laser diode electrical signal into a laser
U14	USP5,527,991	diode optical signal and transmit the laser diode optical signal.
U15	USP5,534,662	These references do not qualify as prior art.
U16	USP5,535,296	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V2	USP5,545,845	These references do not qualify as prior art.
V3	USP5,546,281	Applicants have claimed priority to Japanese
V4	USP5,547,385	Application No. 06-086691, filed on April 25, 1994, in Japan.
V5	USP5,548,641	V5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical
V8	USP5,554,037	module comprising a laser diode module to convert
V9	USP5,567,167	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V10	USP5,577,064	V10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
V11	USP5,580,269	V11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical
V14	USP5,599,595	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art.
W2	USP5,631,998	Applicants have claimed priority to Japanese
W3	USP5,653,596	Application No. 06-086691, filed on April 25, 1994, in Japan.
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
W5	USP5,675,428	These references do not qualify as prior art.
W6	USP5,687,267	Applicants have claimed priority to Japanese
W7	USP5,717,533	Application No. 06-086691, filed on April 25,
W8	USP5,724,729	1994, in Japan.
W9	USP5,726,864	

W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art.
X2	USP5,879,173	Applicants have claimed priority to Japanese
	, ,	Application No. 06-086691, filed on April 25,
		1994, in Japan.
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical
X4	EP 0 232792 A1	module comprising a laser diode module to convert
X5	EP.0 228 278	a laser diode electrical signal into a laser diode
X6	EP.0 305112 A2	optical signal and transmit the laser diode optical
	EP.0 303112 A2	signal.
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical
X8		module comprising a laser diode electrical signal
	EP.0 413 489 A2	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
X9		X9 does not disclose, at least, an optical module
	EP.0 437 161 A2	comprising a laser diode module to convert a laser
	EP.0 437 101 A2	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
X10		X10 does not disclose, at least, an optical module
-	EP.0 456 298 B1	comprising a laser diode electrical signal converter
	LI .0 430 270 B1	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
X11		X11 does not disclose, at least, an optical module
	EP.0 530 791 A2	comprising a laser diode module to convert a laser
	EF.0 530 791 A2	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an
X13	EP.0 588 014 A2	optical module comprising a laser diode electrical
X14		signal converter to convert serial data, received
	EP.0 600 645 A1	from a motherboard, into a laser diode electrical
		signal.
X15		X15 does not disclose, at least, an optical module
	EP.0 613 032 A2	comprising a single circuit board on which a serial
		connector and a laser diode electrical signal
-		converter are mounted, and to which a laser diode
		module and photo diode module are electrically
		connected proximate to a first edge of the circuit

		board.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an
X17	EP.0 656 696 A1	optical module comprising a laser diode module to
X18		convert a laser diode electrical signal into a laser
	EP.0 662 259 B1	diode optical signal and transmit the laser diode
		optical signal.
X19		X19 does not disclose, at least, an optical module
	EP.442 608 A2	comprising a laser diode electrical signal converter
		to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical
X21		module comprising a laser diode module to convert
	JP.1-237783	a laser diode electrical signal into a laser diode
		optical signal and transmit the laser diode optical
		signal.

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical
Y2	JP.2-181710	module comprising a laser diode electrical signal
Y3	JP.2-278212	converter to convert serial data, received from a
Y4	JP.2-87837	motherboard, into a laser diode electrical signal.
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical
Y6	JP.3-94869	module comprising a laser diode module to convert
Y7		a laser diode electrical signal into a laser diode
	JP.4-109593	optical signal and transmit the laser diode optical
		signal.
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical
Y9	JP.4-165312	module comprising a laser diode electrical signal
Y10	JP.4-211208	converter to convert serial data, received from a
	JF.4-211208	motherboard, into a laser diode electrical signal.
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an
Y12	JP.4-229962	optical module comprising a laser diode module to
Y13		convert a laser diode electrical signal into a laser
	JP.4-230978	diode optical signal and transmit the laser diode
		optical signal.
Y14		Y14 does not disclose, at least, an optical module
	JP.4-234715	comprising a laser diode electrical signal converter
	31.4-254713	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an
Y16	JP.4-50901	optical module comprising a laser diode module to
Y17	JP.4-87809	convert a laser diode electrical signal into a laser
Y18	JP.5-052802	diode optical signal and transmit the laser diode
		optical signal.
Y19	JP.5-134147	Y19 does not disclose, at least, an optical module

comprising a laser diode electrical signal converter
to convert serial data, received from a
 motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical
Z2		module comprising a laser diode electrical signal
	JP.5-188250	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
Z3		Z3 does not disclose, at least, an optical module
	JP.5-211379	comprising a laser diode module to convert a laser
	131.3-211379	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
Z4		Z4 does not disclose, at least, an optical module
	JP.5-218581	comprising a laser diode electrical signal converter
	31.3-216361	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
<b>Z</b> 5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical
Z6	JP.5-70955	module comprising a laser diode module to convert
<b>Z</b> 7	JP.61-158046	a laser diode electrical signal into a laser diode
Z8	JP.61-188385	optical signal and transmit the laser diode optical signal.
Z9	JP.63-009325	Z9 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an
Z11	JP.63-65967	optical module comprising a laser diode module to
Z12	JP.63-65978	convert a laser diode electrical signal into a laser
Z13	JP.63-82998	diode optical signal and transmit the laser diode
Z14	U-3-20458	optical signal.
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an
AA2	U-63-16496	optical module comprising a laser diode module to
AA3	U-63-65967	convert a laser diode electrical signal into a laser

AA4	U-63-65978	diode optical signal and transmit the laser diode
AA5	U-63-82998	optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB2	Ronald LSoderstrom et al.,"An optical Date Link using a CD laser", SPIE Vol. 1577 High Speed Fiber Networks and Channels, pp. 163-173, 1991	BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode electrical
BB3	BCP,Inc."Gigabits Over Multimode Optical Fiber"no date	signal converter to convert serial data, received
BB4	Ronald L.Soderstrom et al., "CD laser optical Date Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	from a motherboard, into a laser diode electrical signal.
BB5	FDDI Low-Cost Fiber Phyiscal Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	BB5 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
BB6	HP Module HFBR-5103, FDDI Data Sheet,http://www.hp.com/HP- COMP/fiber/hfbr5103.html,Jun.11,1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module to convert
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System".www.patents.ibm.com/tdbs/tdb?ℴ=93A +60964,April 1993	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB8	IBM, "A Proposal for a New High Performance "OptopElectronics Enterprise Oct.1992 ANSI Meeting,Oct.13,1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode electrical signal
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	BB10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver",Electronic Engineering Times,Aug.1993.	BB11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art.

		Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Sandards?" no date.	CC3 through CC5 do not disclose, at least, an
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	optical module comprising a laser diode electrical signal converter to convert serial data, received
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	from a motherboard, into a laser diode electrical signal.
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	CC7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	CC8 and CC9 do not disclose, at least, an optical module comprising a laser diode module to convert
СС9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454.definition of LED, Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC11	Edward R.Salmon, Encapsulation of Electronic Devices and Components, Marcel Deckker Inc., New York, 1987	CC11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conducive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode module to
DD2	HEADS UpSumitomo Electric Lightwave joins Other in Announcement, May 11,1995	convert a laser diode electrical signal into a laser
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	diode optical signal and transmit the laser diode optical signal.
DD4	Shortwave Opto Assembly, IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev. 1, Jan. 6, 1993	DD4 and DD5 do not disclose, at least, an optical module comprising a laser diode electrical signal
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.	DD6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

DD7	Ronald LSoderstrom et al., A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD)··· FOC/LAN'87&MFOC-WEST,pp.383-385,no date.  "Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	DD7 through DD9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
DD9	Ronald L.Soderstrom et al., Optical Components and Electronic Packaging for High Performance Optical Date Links, THE RESEARCH INVESTMENT, p. 19-28 (no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute,1996.	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber, Van Nostrand Reinhold Publishing, 1983	diode optical signal and transmit the laser diode optical signal.
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	op. Total organic
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer date links", Fiber Optic Datacom and Computer Networks, SPIE-The International Society for Optical Engineerdings, Vol. 1577, pp. 174-181, 1988	
EE5	David A.Knodel et al., "Open Fibre Control,a laser safety interlock technique", High-Speed Fiber Networks and Channels, SPIE-The International Society for Optical Engineering Proceedings, Vol. 991, pp. 179-182, 1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34, No.7B, Dec. 1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge, IBM Technical Disclosure Bulletin, March 1987, https://www.delphion.com/tdb?o=87A%2060509, last visited Mar. 8, 2005.	
EE9	K.P.Jackson et al.,"High-Density, Array, Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings, IEEE Computer Society Press.	

## Claim Chart for Claims 176-177 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical
A2	USP2,899,669	module comprising a laser diode module to convert
A3	USP3,264,601	a laser diode electrical signal into a laser diode
A4	USP3,332,860	optical signal and transmit the laser diode optical
A5	USP3,474,380	signal.
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
A14	USP3,805,116	A14 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical
A16	USP3,976,877	module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical
B2	USP4,047,242	module comprising a laser diode module to convert
B3	110D4 154 002	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical
	USP4,156,903	signal.
B4		B4 does not disclose, at least, an optical module
	USP4,161,650	comprising a laser diode electrical signal converter
	0374,101,030	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical
B6	USP4,176,897	module comprising a laser diode module to convert
B7		a laser diode electrical signal into a laser diode
	USP4,217,019	optical signal and transmit the laser diode optical
		signal.
B8	USP4,217,488	B8 does not disclose, at least, an optical module
	USF4,217,400	comprising a laser diode electrical signal converter

B9 B10	USP4,226,491	to convert serial data, received from a motherboard, into a laser diode electrical signal.  B9 and B10 do not disclose, at least, an optical module comprising a laser diode module to convert
	USP4,234,968	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B11	USP4,249,266	B11 through B13 do not disclose, at least, an
B12	USP4,252,402	optical module comprising a laser diode electrical
B13	USP4,257,124	signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical
B15	USP4,273,413	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B16	USP4,276,656	B16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
C2	USP4,295,181	C2 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical
C4	USP4,330,870	module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
C5	USP4,345,808	C5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C6	USP4,347,655	C6 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal

		converter are mounted, and to which a laser diode
		module and photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
C7		C7 does not disclose, at least, an optical module
	NGD 4 257 (0)	comprising a laser diode electrical signal converter
	USP4,357,606	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
C8		C8 does not disclose, at least, an optical module
	11004 260 240	comprising a laser diode module to convert a laser
	USP4,360,248	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
C9		C9 does not disclose, at least, an optical module
		comprising a single circuit board on which a serial
		connector and a laser diode electrical signal
	USP4,366,565	converter are mounted, and to which a laser diode
		module and photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
C10	USP4,369,494	C10 through C15 do not disclose, at least, an
C11	USP4,380,360	optical module comprising a laser diode module to
C12	USP4,388,671	convert a laser diode electrical signal into a laser
C13	USP4,393,516	diode optical signal and transmit the laser diode
C14	USP4,398,073	optical signal.
C15	USP4,398,780	
C16		C16 does not disclose, at least, an optical module
		comprising a single circuit board on which a serial
		connector and a laser diode electrical signal
	USP4,399,563	converter are mounted, and to which a laser diode
		module and photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.

Ref	Title	Distinction between reference(s) and claim(s)
D1		D1 does not disclose, at least, an optical module
	USP4,408,273	comprising a laser diode module to convert a laser
1		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical
D3	USP4,427,879	module comprising a laser diode electrical signal
D4	LICD4 420 600	converter to convert serial data, received from a
	USP4,430,699	motherboard, into a laser diode electrical signal.
D5		D5 does not disclose, at least, an optical module
	USP4,434,537	comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical

		signal and transmit the laser diode optical signal.
D6		D6 does not disclose, at least, an optical module
	LICD4 427 100	comprising a laser diode electrical signal converter
	USP4,437,190	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
D7		D7 does not disclose, at least, an optical module
		comprising a single circuit board on which a serial
		connector and a laser diode electrical signal
	USP4,439,006	converter are mounted, and to which a laser diode
		module and photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical
D9		module comprising a laser diode electrical signal
	USP4,449,244	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
D10	USP4,449,784	D10 through D13 not disclose, at least, an optical
D11	USP4,453,903	module comprising a laser diode module to convert
D12	USP4,459,658	a laser diode electrical signal into a laser diode
D13	USP4,461,537	optical signal and transmit the laser diode optical
	031 4,401,337	signal.
D14		D14 does not disclose, at least, an optical module
	USP4,470,154	comprising a laser diode electrical signal converter
	051 1,170,131	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
D15		D15 does not disclose, at least, an optical module
	USP4,486,059	comprising a laser diode module to convert a laser
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
D16		D16 does not disclose, at least, an optical module
	USP4,493,113	comprising a laser diode electrical signal converter
	001 7,773,113	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	El does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical
E3	USP4,505,035	module comprising a laser diode module to convert
E4	USP4,506,937	a laser diode electrical signal into a laser diode
E5	USP4,510,553	optical signal and transmit the laser diode optical signal.
E6	USP4,511,207	E6 does not disclose, at least, an optical module

		comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical
E8	USP4,516,204	module comprising a laser diode module to convert
E9	USP4,519,670	a laser diode electrical signal into a laser diode
E10	USP4,519,672	optical signal and transmit the laser diode optical
E11	USP4,519,673	signal.
E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	T
E15		E15 does not disclose, at least, an optical module
	11004 527 206	comprising a laser diode electrical signal converter
	USP4,527,286	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
E16		E16 does not disclose, at least, an optical module
	USP4,529,266	comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical
F2	USP4,531,810	module comprising a laser diode module to convert
F3		a laser diode electrical signal into a laser diode
	USP4,533,208	optical signal and transmit the laser diode optical
		signal.
F4		F4 does not disclose, at least, an optical module
	USP4,533,209	comprising a laser diode electrical signal converter
	051 1,333,207	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical
F6	USP45,34,617	module comprising a laser diode module to convert
F7	USP4,535,233	a laser diode electrical signal into a laser diode
F8	USP4,537,468	optical signal and transmit the laser diode optical
	USF 4,337,408	signal.
F9		F9 does not disclose, at least, an optical module
İ	USP4,539,476	comprising a laser diode electrical signal converter
	0354,339,470	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical
F11	USP4,540,246	module comprising a laser diode module to convert
F12	USP4,541,036	a laser diode electrical signal into a laser diode

F13	USP4,541,685	optical signal and transmit the laser diode optical
F14	USP4,542,076	signal.
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical
G3	USP4,545,077	module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical
G5	USP4,545,643	module comprising a laser diode module to convert
G6	USP4,545,644	a laser diode electrical signal into a laser diode
G7	USP4,545,645	optical signal and transmit the laser diode optical
G8	USP4,548,465	signal.
G9	USP4,548,466	G9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G10	USP4,548,467	G10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G11	USP4,549,782	G11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an
G13	USP4,550,975	optical module comprising a laser diode module to
G14	USP4,553,811	convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G15	USP4,553,813	G15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G16	USP4,553,814	G16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser

diode electrical signal into a laser diode optical
signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical
H2	USP4,556,281	module comprising a laser diode module to convert
H3	USP4,556,282	a laser diode electrical signal into a laser diode
H4	USP4,557,551	optical signal and transmit the laser diode optical
H5	USP4,560,234	signal.
Н6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an
H13	USP4,588,256	optical module comprising a laser diode module to
H14	USP4,589,728	convert a laser diode electrical signal into a laser
H15	USP4,597,631	diode optical signal and transmit the laser diode
H16	USP4,614,836	optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module
I2	USP4,634,239	comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
I3	USP4,641,371	I3 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
I4	USP4,647,148	I4 through I16 do not disclose, at least, an optical
I5	USP4,652,976	module comprising a laser diode module to convert
I6	USP4,663,240	a laser diode electrical signal into a laser diode
I7	USP4,663,603	optical signal and transmit the laser diode optical
18	USP4,678,264	signal.
<u>19</u>	USP4,679,883	
I10	USP4,695,106	

I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical
J2	USP4,762,388	module comprising a laser diode module to convert
J3	USP4,767,179	a laser diode electrical signal into a laser diode
J4	USP4,772,931	optical signal and transmit the laser diode optical
J5	USP4,779,952	signal.
J6	USP4,789,218	
J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12_	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K2	USP4,844,581	K2 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical
K4	USP4,847,771	module comprising a laser diode module to convert
K5	USP4,849,944	a laser diode electrical signal into a laser diode

K6	USP4,857,002	optical signal and transmit the laser diode optical
K7		signal.
	USP4,862,327	Signal.
K8	USP4,872,212	
K9	USP4,872,736	
K10		K10 does not disclose, at least, an optical module
	USP4,881,789	comprising a laser diode electrical signal converter
	0514,001,709	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
K11		K11 does not disclose, at least, an optical module
	USP4,884,336	comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
K12		K12 does not disclose, at least, an optical module
	1100 1 000 011	comprising a laser diode electrical signal converter
	USP4,897,711	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an
K14	USP4,927,225	optical module comprising a laser diode module to
K15	USP4,944,568	convert a laser diode electrical signal into a laser
K16	USP4,945,448	diode optical signal and transmit the laser diode
	051 4,545,446	optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical
L2	USP4,955,817	module comprising a laser diode module to convert
L3	USP4,963,104	a laser diode electrical signal into a laser diode
L4	USP4,967,312	optical signal and transmit the laser diode optical signal.
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical
L7	USP4,979,794	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical
L9	USP4,989,934	module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical
L11	USP4,991,062	module comprising a laser diode module to convert
L12	USP5,002,495	a laser diode electrical signal into a laser diode
L13	USP5,004,434	optical signal and transmit the laser diode optical

L14	USP5,006,286	signal.
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical
M2	USP5,035,641	module comprising a laser diode module to convert
M3	USP5,040,993	a laser diode electrical signal into a laser diode
M4	USP5,041,025	optical signal and transmit the laser diode optical signal.
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an
M7	USP5,045,635	optical module comprising a laser diode module to
M8	USP5,045,971	convert a laser diode electrical signal into a laser
M9	USP5,046,955	diode optical signal and transmit the laser diode
M10	USP5,060,373	optical signal.
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
N1		N1 does not disclose, at least, an optical module
	LIGDS 001 001	comprising a laser diode module to convert a laser
1	USP5,091,991	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
N2		N2 does not disclose, at least, an optical module
	USP5,093,879	comprising a laser diode electrical signal converter
		to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical
N4	USP5,101,463	module comprising a laser diode module to convert
N5	USP5,104,243	a laser diode electrical signal into a laser diode

N6	USP5,107,404	optical signal and transmit the laser diode optical
N7	USP5,108,294	signal.
N8	USP5,109,453	
N9	USP5,113,467	N9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an
N11	USP5,117,476	optical module comprising a laser diode module to
N12	USP5,118,362	convert a laser diode electrical signal into a laser
N13	USP5,118,904	diode optical signal and transmit the laser diode
N14	USP5,120,578	optical signal.
N15	USP5,122,893	N15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical
N17	USP5,125,849	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N19	USP5,132,871	N19 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Ref	Title	Distinction between reference(s) and claim(s)
01	USP5,134,677	O1 through O3 do not disclose, at least, an optical
02	USP5,134,679	module comprising a laser diode module to convert
O3	USP5,136,063	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical
O5	USP5,136,603	module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
06		
	USP5,138,537	O6 through O8 do not disclose, at least, an optical
O7	USP5,138,537 USP5,138,678	O6 through O8 do not disclose, at least, an optical module comprising a laser diode module to convert

signal.

08

09

USP5,140,663

USP5,155,786

a laser diode electrical signal into a laser diode

O9 and O10 do not disclose, at least, an optical

optical signal and transmit the laser diode optical

O10		module comprising a laser diode electrical signal
	USP5,157,769	converter to convert serial data, received from a
	, ,	motherboard, into a laser diode electrical signal.
011		O11 does not disclose, at least, an optical module
	HODE 167 120	comprising a laser diode module to convert a laser
	USP5,167,139	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
O12		O12 does not disclose, at least, an optical module
	HCD5 169 527	comprising a laser diode electrical signal converter
	USP5,168,537	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an
014	USP5,171,167	optical module comprising a laser diode module to
O15	USP5,173,059	convert a laser diode electrical signal into a laser
016	USP5,183,404	diode optical signal and transmit the laser diode
017	USP5,183,405	optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical
P2	USP5,202,536	module comprising a laser diode module to convert
P3	USP5,207,597	a laser diode electrical signal into a laser diode
P4	USP5,212,752	optical signal and transmit the laser diode optical signal.
P5	USP5,212,754	P5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical
P7	USP5,225,760	module comprising a laser diode module to convert
P8	USP5,233,676	a laser diode electrical signal into a laser diode
P9	USP5,233,674	optical signal and transmit the laser diode optical
P10	USP5,234,353	signal.
P11	USP5,238,426	
P12	USP5,241,614	P12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
P13	USP5,247,532	P13 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical

P15	USP5,259,054	module comprising a laser diode module to convert
P16	USP5,262,923	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
P17	USP5,271,079	P17 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Q1		Q1 does not disclose, at least, an optical module
	HSD5 274 720	comprising a laser diode module to convert a laser
	USP5,274,729	diode electrical signal into a laser diode optical
_		signal and transmit the laser diode optical signal.
Q2		Q2 does not disclose, at least, an optical module
	USP5,285,466	comprising a laser diode electrical signal converter
	031 3,283,400	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
Q3		Q3 does not disclose, at least, an optical module
	USP5,285,511	comprising a laser diode module to convert a laser
	051 3,203,311	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
Q4		Q4 does not disclose, at least, an optical module
	USP5,285,512	comprising a laser diode electrical signal converter
	051 5,265,612	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an optical
Q6	USP5,286,247	module comprising a laser diode module to convert
Q7	USP5,288,247	a laser diode electrical signal into a laser diode
Q8	USP5,289,347	optical signal and transmit the laser diode optical
Q9	USP5,296,813	signal.
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	_
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical
R2	USP5,333,221	module comprising a laser diode module to convert

R3		a laser diode electrical signal into a laser diode
	USP5,333,225	optical signal and transmit the laser diode optical
		signal.
R4		R4 does not disclose, at least, an optical module
	11005 227 201	comprising a laser diode electrical signal converter
	USP5,337,391	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical
R6		module comprising a laser diode module to convert
1	TIGD 5 240 240	a laser diode electrical signal into a laser diode
	USP5,340,340	optical signal and transmit the laser diode optical
		signal.
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical
R8		module comprising a laser diode electrical signal
	USP5,345,530	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
R9		R9 does not disclose, at least, an optical module
		comprising a single circuit board on which a serial
		connector and a laser diode electrical signal
	USP5,353,364	converter are mounted, and to which a laser diode
		module and photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an
R11	USP5,356,300	optical module comprising a laser diode module to
R12		convert a laser diode electrical signal into a laser
	USP5,357,402	diode optical signal and transmit the laser diode
		optical signal.
R13		R13 does not disclose, at least, an optical module
	USP5,361,244	comprising a laser diode electrical signal converter
	0010,001,271	to convert serial data, received from a
	N .	motherboard, into a laser diode electrical signal.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an
R15	USP5,366,664	optical module comprising a laser diode module to
R16		convert a laser diode electrical signal into a laser
	USP5,372,515	diode optical signal and transmit the laser diode
		optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical
S2	USP5,383,793	module comprising a laser diode module to convert
S3	USP5,388,995	a laser diode electrical signal into a laser diode
S4	USP5,390,268	optical signal and transmit the laser diode optical
S5	USP5,393,249	signal.
S6	USP5,397,242	

		<b>-</b>
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	S10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
S11	USP5,416,668	S11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical
S14	USP5,419,717	module comprising a laser diode module to convert
S15	USP5,424,573	a laser diode electrical signal into a laser diode
S16	USP5,428,703	optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
T1		T1 does not disclose, at least, an optical module
	USP5,428,704	comprising a laser diode electrical signal converter
		to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical
T3		module comprising a laser diode module to convert
	USP5,443,390	a laser diode electrical signal into a laser diode
	051 5,445,570	optical signal and transmit the laser diode optical
		signal.
T4		T4 does not disclose, at least, an optical module
	USP5,446,814	comprising a laser diode electrical signal converter
	051 5,440,614	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
T5		This reference does not qualify as prior art.
	USP5,452,387	Applicants have claimed priority to Japanese
	031 3,432,367	Application No. 06-086691, filed on April 25,
		1994, in Japan.
T6		T6 does not disclose, at least, an optical module
	USP5,454,080	comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
T7	USP5,455,703	T7 does not disclose, at least, an optical module
	0313,433,703	comprising a laser diode electrical signal converter

	to convert serial data, received from a
	motherboard, into a laser diode electrical signal.
USP5,463,532	T8 and T9 do not disclose, at least, an optical
	module comprising a laser diode module to convert
110D5 460 220	a laser diode electrical signal into a laser diode
USP5,469,332	optical signal and transmit the laser diode optical
	signal.
USP5,470,257	These references do not qualify as prior art.
	Applicants have claimed priority to Japanese
USP5,470,259	Application No. 06-086691, filed on April 25,
	1994, in Japan.
	T12 does not disclose, at least, an optical module
11005 475 724	comprising a laser diode module to convert a laser
USP3,473,734	diode electrical signal into a laser diode optical
	signal and transmit the laser diode optical signal.
USP5,477,418	These references do not qualify as prior art.
	Applicants have claimed priority to Japanese
USP5,478,253	Application No. 06-086691, filed on April 25,
	1994, in Japan.
USP5,478,259	T15 and T16 do not disclose, at least, an optical
	module comprising a laser diode module to convert
USP5,478,260	a laser diode electrical signal into a laser diode
	optical signal and transmit the laser diode optical
	signal.
	USP5,469,332 USP5,470,257 USP5,470,259 USP5,475,734 USP5,477,418 USP5,478,253 USP5,478,259

Ref	Title	Distinction between reference(s) and claim(s)
U1		U1 does not disclose, at least, an optical module
	USP5,481,634	comprising a laser diode module to convert a laser
	0513,461,034	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
U2		U2 does not disclose, at least, an optical module
	11005 402 650	comprising a laser diode electrical signal converter
	USP5,482,658	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical
U4		module comprising a laser diode module to convert
	USP5,491,613	a laser diode electrical signal into a laser diode
	0373,491,013	optical signal and transmit the laser diode optical
		signal.
U5		This reference does not qualify as prior art.
	USP5,491,712	Applicants have claimed priority to Japanese
	USP3,491,712	Application No. 06-086691, filed on April 25,
		1994, in Japan.
U6	LISDS 404 747	U6 does not disclose, at least, an optical module
	USP5,494,747	comprising a laser diode module to convert a laser

		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
U7		This reference does not qualify as prior art.
	LICDS 400 211	Applicants have claimed priority to Japanese
	USP5,499,311	Application No. 06-086691, filed on April 25,
		1994, in Japan.
U8		U8 does not disclose, at least, an optical module
	LIGDS 400 212	comprising a laser diode electrical signal converter
	USP5,499,312	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
U9		This reference does not qualify as prior art.
	LICDS 504 (57	Applicants have claimed priority to Japanese
	USP5,504,657	Application No. 06-086691, filed on April 25,
		1994, in Japan.
U10		U10 does not disclose, at least, an optical module
	LICDS 506 021	comprising a laser diode electrical signal converter
	USP5,506,921	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an
U12	USP5,507,668	optical module comprising a laser diode module to
U13	USP5,526,235	convert a laser diode electrical signal into a laser
U14	LIGDS 527 001	diode optical signal and transmit the laser diode
	USP5,527,991	optical signal.
U15	USP5,534,662	These references do not qualify as prior art.
U16		Applicants have claimed priority to Japanese
	USP5,535,296	Application No. 06-086691, filed on April 25,
		1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
V1		V1 does not disclose, at least, an optical module
1	USP5,535,364	comprising a laser diode module to convert a laser
	0313,333,304	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
V2	USP5,545,845	These references do not qualify as prior art.
V3	USP5,546,281	Applicants have claimed priority to Japanese
V4	USP5,547,385	Application No. 06-086691, filed on April 25,
	USF3,347,383	1994, in Japan.
V5		V5 does not disclose, at least, an optical module
	TIGDS 540 C41	comprising a laser diode module to convert a laser
	USP5,548,641	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
V6		This reference does not qualify as prior art.
	USP5,548,677	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.

V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical
V8	USP5,554,037	module comprising a laser diode module to convert
V9	USP5,567,167	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V10	USP5,577,064	V10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
V11	USP5,580,269	V11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical
V14	USP5,599,595	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art.
W2	USP5,631,998	Applicants have claimed priority to Japanese
W3	USP5,653,596	Application No. 06-086691, filed on April 25,
	031 3,033,370	1994, in Japan.
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
W5	USP5,675,428	These references do not qualify as prior art.
W6	USP5,687,267	Applicants have claimed priority to Japanese
W7	USP5,717,533	Application No. 06-086691, filed on April 25,
W8	USP5,724,729	1994, in Japan.
W9	USP5,726,864	

W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art.
X2	USP5,879,173	Applicants have claimed priority to Japanese
	, ,	Application No. 06-086691, filed on April 25,
		1994, in Japan.
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical
X4	EP 0 232792 A1	module comprising a laser diode module to convert
X5	EP.0 228 278	a laser diode electrical signal into a laser diode
X6	EP.0 305112 A2	optical signal and transmit the laser diode optical signal.
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical
X8	LI .0 314 031 A2	module comprising a laser diode electrical signal
Au	EP.0 413 489 A2	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
X9		X9 does not disclose, at least, an optical module
	ED 0 427 161 42	comprising a laser diode module to convert a laser
	EP.0 437 161 A2	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
X10		X10 does not disclose, at least, an optical module
	EP.0 456 298 B1	comprising a laser diode electrical signal converter
	E1.0 430 270 B1	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
X11		X11 does not disclose, at least, an optical module
	EP.0 530 791 A2	comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
V12	ED 0 525 472 A1	signal and transmit the laser diode optical signal.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an optical module comprising a laser diode electrical
X13	EP.0 588 014 A2	signal converter to convert serial data, received
X14	EP.0 600 645 A1	from a motherboard, into a laser diode electrical
	EF .0 000 043 AT	signal.
X15		X15 does not disclose, at least, an optical module
		comprising a single circuit board on which a serial
	EP.0 613 032 A2	connector and a laser diode electrical signal
		converter are mounted, and to which a laser diode
		module and photo diode module are electrically
		connected proximate to a first edge of the circuit

		board.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an
X17	EP.0 656 696 A1	optical module comprising a laser diode module to
X18	EP.0 662 259 B1	convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X19	EP.442 608 A2	X19 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical
X21	JP.1-237783	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
<u>Y1</u>	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical
Y2	JP.2-181710	module comprising a laser diode electrical signal
Y3	JP.2-278212	converter to convert serial data, received from a
Y4	JP.2-87837	motherboard, into a laser diode electrical signal.
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical
Y6	JP.3-94869	module comprising a laser diode module to convert
Y7		a laser diode electrical signal into a laser diode
	JP.4-109593	optical signal and transmit the laser diode optical
		signal.
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical
Y9	JP.4-165312	module comprising a laser diode electrical signal
Y10	JP.4-211208	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an
Y12	JP.4-229962	optical module comprising a laser diode module to
Y13		convert a laser diode electrical signal into a laser
	JP.4-230978	diode optical signal and transmit the laser diode
		optical signal.
Y14		Y14 does not disclose, at least, an optical module
	JP.4-234715	comprising a laser diode electrical signal converter
		to convert serial data, received from a
371.5	TD 4 270205	motherboard, into a laser diode electrical signal.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an
Y16	JP.4-50901	optical module comprising a laser diode module to
Y17	JP.4-87809	convert a laser diode electrical signal into a laser
Y18	JP.5-052802	diode optical signal and transmit the laser diode
7710		optical signal.
Y19	JP.5-134147	Y19 does not disclose, at least, an optical module

comprising a laser diode electrical signal converter
to convert serial data, received from a
motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 through Z2 do not disclose, at least, an optical
Z2	JP.5-188250	module comprising a laser diode electrical signal converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
Z3	JP.5-211379	Z3 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Z4	JP.5-218581	Z4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
<b>Z</b> 5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical
Z6	JP.5-70955	module comprising a laser diode module to convert
<b>Z</b> 7	JP.61-158046	a laser diode electrical signal into a laser diode
Z8	JP.61-188385	optical signal and transmit the laser diode optical signal.
<b>Z</b> 9	JP.63-009325	Z9 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an
Z11	JP.63-65967	optical module comprising a laser diode module to
Z12	JP.63-65978	convert a laser diode electrical signal into a laser
Z13	JP.63-82998	diode optical signal and transmit the laser diode
Z14	U-3-20458	optical signal.
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an
AA2	U-63-16496	optical module comprising a laser diode module to
AA3	U-63-65967	convert a laser diode electrical signal into a laser

AA4	U-63-65978	diode optical signal and transmit the laser diode
AA5	U-63-82998	optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB2	Ronald LSoderstrom et al.,"An optical Date Link using a CD laser", SPIE Vol. 1577 High Speed Fiber Networks and Channels, pp. 163-173, 1991	BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode electrical
BB3	BCP,Inc."Gigabits Over Multimode Optical Fiber"no date	signal converter to convert serial data, received
BB4	Ronald L.Soderstrom et al., "CD laser optical Date Links for Workstation and Midrange Computers", IEEE p.505-509,1993.	from a motherboard, into a laser diode electrical signal.
BB5	FDDI Low-Cost Fiber Phyiscal Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	BB5 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
BB6	HP Module HFBR-5103, FDDI Data Sheet,http://www.hp.com/HP- COMP/fiber/hfbr5103.html,Jun.11,1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module to convert
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System".www.patents.ibm.com/tdbs/tdb?ℴ=93A+60964,April 1993	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB8	IBM, "A Proposal for a New High Performance "OptopElectronics Enterprise Oct. 1992 ANS1 Meeting, Oct. 13, 1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode electrical signal
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	BB10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	BB11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art.

		Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Sandards?" no date.	CC3 through CC5 do not disclose, at least, an
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	optical module comprising a laser diode electrical signal converter to convert serial data, received
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	from a motherboard, into a laser diode electrical signal.
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	CC7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	CC8 and CC9 do not disclose, at least, an optical module comprising a laser diode module to convert
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454.definition of LED, Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC11	Edward R.Salmon,Encapsulation of Electronic Devices and Components,Marcel Deckker Inc.,New York,1987	CC11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conducive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode module to
DD2	HEADS UpSumitomo Electric Lightwave joins Other in Announcement,May 11,1995	convert a laser diode electrical signal into a laser
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	diode optical signal and transmit the laser diode optical signal.
DD4	Shortwave Opto Assembly, IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev. 1, Jan. 6, 1993	DD4 through DD5 do not disclose, at least, an optical module comprising a laser diode electrical
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.	DD6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

DD7	Ronald LSoderstrom et al., A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD)··· FOC/LAN' 87&MFOC-WEST,pp.383-385,no date. "Transceiver Module Assembly", IBM Technical Disclosure	DD7 and DD9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a
DD8	Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	motherboard, into a laser diode electrical signal.
DD9	Ronald L.Soderstrom et al., Optical Components and Electronic Packaging for High Performance Optical Date Links, THE RESEARCH INVESTMENT, p. 19-28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute, 1996.	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	diode optical signal and transmit the laser diode optical signal.
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer date links", Fiber Optic Datacom and Computer Networks, SPIE-The International Society for Optical Engineerdings, Vol. 1577, pp. 174-181, 1988	
EE5	David A.Knodel et al.,"Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34, No.7B, Dec. 1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge, IBM Technical Disclosure Bulletin, March 1987, https://www.delphion.com/tdb?o=87A%2060509 ,last visited Mar. 8, 2005.	
EE9	K.P.Jackson et al.,"High-Density,Array,Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings,IEEE Computer Society Press.	

## Claim Chart for Claims 178-179 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical
A2	USP2,899,669	module comprising a laser diode module to convert
A3	USP3,264,601	a laser diode electrical signal into a laser diode
A4	USP3,332,860	optical signal and transmit the laser diode optical
A5	USP3,474,380	signal.
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
A14		A14 does not disclose, at least, an optical module
	USP3,805,116	comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
115	LIGD2 000 000	signal and transmit the laser diode optical signal.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical
A16	LIGD2 077 077	module comprising a laser diode electrical signal
	USP3,976,877	converter to convert serial data, received from a
L		motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical
B2	USP4,047,242	module comprising a laser diode module to convert
В3	USP4,156,903	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B4		B4 does not disclose, at least, an optical module
D4	USP4,161,650	comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical
B6	USP4,176,897	module comprising a laser diode module to convert
В7	USP4,217,019	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B8	USP4,217,488	B8 does not disclose, at least, an optical module comprising a laser diode electrical signal converter

		to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical
B10		module comprising a laser diode module to convert
	USP4,234,968	a laser diode electrical signal into a laser diode
:	USF4,234,908	optical signal and transmit the laser diode optical
		signal.
B11	USP4,249,266	B11 through B13 do not disclose, at least, an
B12	USP4,252,402	optical module comprising a laser diode electrical
B13		signal converter to convert serial data, received
	USP4,257,124	from a motherboard, into a laser diode electrical
		signal.
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical
B15		module comprising a laser diode module to convert
	USP4,273,413	a laser diode electrical signal into a laser diode
	0584,273,413	optical signal and transmit the laser diode optical
		signal.
B16		B16 does not disclose, at least, an optical module
	11904 276 656	comprising a laser diode electrical signal converter
	USP4,276,656	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
C1		C1 does not disclose, at least, an optical module
	USP4,294,682	comprising a laser diode electrical signal converter
	1,251,002	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
C2		C2 does not disclose, at least, an optical module
	USP4,295,181	comprising a laser diode module to convert a laser
	051 4,273,101	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical
C4		module comprising a single circuit board on which
		a serial connector and a laser diode electrical signal
	USP4,330,870	converter are mounted, and to which a laser diode
	031 4,330,870	module and a photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
C5		C5 does not disclose, at least, an optical module
	USP4,345,808	comprising a laser diode module to convert a laser
	USF4,343,606	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
C6		C6 does not disclose, at least, an optical module
	USP4,347,655	comprising a single circuit board on which a serial
		connector and a laser diode electrical signal

<u> </u>		converter are mounted, and to which a laser diode
		module and a photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
C7		C7 does not disclose, at least, an optical module
	USP4,357,606	comprising a laser diode electrical signal converter
	051 4,557,000	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
C8		C8 does not disclose, at least, an optical module
	11004 260 249	comprising a laser diode module to convert a laser
	USP4,360,248	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
C9		C9 does not disclose, at least, an optical module
		comprising a single circuit board on which a serial
		connector and a laser diode electrical signal
	USP4,366,565	converter are mounted, and to which a laser diode
	,	module and a photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
C10	USP4,369,494	C10 through C15 do not disclose, at least, an
C11	USP4,380,360	optical module comprising a laser diode module to
C12	USP4,388,671	convert a laser diode electrical signal into a laser
C13	USP4,393,516	diode optical signal and transmit the laser diode
C14	USP4,398,073	optical signal.
C15	USP4,398,780	
C16		C16 does not disclose, at least, an optical module
		comprising a single circuit board on which a serial
		connector and a laser diode electrical signal
1	USP4,399,563	converter are mounted, and to which a laser diode
	,,	module and a photo diode module are electrically
]		connected proximate to a first edge of the circuit
		board.
L	L	COMIN.

Ref	Title	Distinction between reference(s) and claim(s)
D1		D1 does not disclose, at least, an optical module
	USP4,408,273	comprising a laser diode module to convert a laser
	03F4,408,273	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical
D3	USP4,427,879	module comprising a laser diode electrical signal
D4	LIGDA 420 COO	converter to convert serial data, received from a
	USP4,430,699	motherboard, into a laser diode electrical signal.
D5		D5 does not disclose, at least, an optical module
	USP4,434,537	comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical

		signal and transmit the laser diode optical signal.
D6		D6 does not disclose, at least, an optical module
	HGD4 427 100	comprising a laser diode electrical signal converter
	USP4,437,190	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
D7		D7 does not disclose, at least, an optical module
		comprising a single circuit board on which a serial
		connector and a laser diode electrical signal
	USP4,439,006	converter are mounted, and to which a laser diode
		module and a photo diode module are electrically
		connected proximate to a first edge of the circuit
		board.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical
D9		module comprising a laser diode electrical signal
	USP4,449,244	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
D10	USP4,449,784	D10 through D13 do not disclose, at least, an
D11	USP4,453,903	optical module comprising a laser diode module to
D12	USP4,459,658	convert a laser diode electrical signal into a laser
D13	USP4,461,537	diode optical signal and transmit the laser diode
		optical signal.
D14		D14 does not disclose, at least, an optical module
	USP4,470,154	comprising a laser diode electrical signal converter
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
D15		D15 does not disclose, at least, an optical module
	USP4,486,059	comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
D11		signal and transmit the laser diode optical signal.
D16		D16 does not disclose, at least, an optical module
	USP4,493,113	comprising a laser diode electrical signal converter
		to convert serial data, received from a motherboard,
		into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical
E3	USP4,505,035	module comprising a laser diode module to convert
E4	USP4,506,937	a laser diode electrical signal into a laser diode
E5	USP4,510,553	optical signal and transmit the laser diode optical signal.
E6	USP4,511,207	E6 does not disclose, at least, an optical module

		comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical
E8	USP4,516,204	module comprising a laser diode module to convert
E9	USP4,519,670	a laser diode electrical signal into a laser diode
E10	USP4,519,672	optical signal and transmit the laser diode optical
E11	USP4,519,673	signal.
E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	E15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
E16	USP4,529,266	E16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical
F2	USP4,531,810	module comprising a laser diode module to convert
F3		a laser diode electrical signal into a laser diode
	USP4,533,208	optical signal and transmit the laser diode optical
		signal.
F4		F4 does not disclose, at least, an optical module
	USP4,533,209	comprising a laser diode electrical signal converter
		to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical
F6	USP45,34,617	module comprising a laser diode module to convert
F7	USP4,535,233	a laser diode electrical signal into a laser diode
F8	USP4,537,468	optical signal and transmit the laser diode optical
	USF4,337,408	signal.
F9		F9 does not disclose, at least, an optical module
	LICDA 520 476	comprising a laser diode electrical signal converter
	USP4,539,476	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical
F11	USP4,540,246	module comprising a laser diode module to convert
F12	USP4,541,036	a laser diode electrical signal into a laser diode

F13	USP4,541,685	optical signal and transmit the laser diode optical
F14	USP4,542,076	signal.
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical
G3	USP4,545,077	module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical
G5	USP4,545,643	module comprising a laser diode module to convert
G6	USP4,545,644	a laser diode electrical signal into a laser diode
G7	USP4,545,645	optical signal and transmit the laser diode optical
G8	USP4,548,465	signal.
G9	USP4,548,466	G9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G10	USP4,548,467	G10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G11	USP4,549,782	G11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an
G13	USP4,550,975	optical module comprising a laser diode module to
G14	USP4,553,811	convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G15	USP4,553,813	G15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

G16		G16 does not disclose, at least, an optical module
		comprising a laser diode module to convert a laser
USP4,553,814	USP4,333,614	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical
H2	USP4,556,281	module comprising a laser diode module to convert
Н3	USP4,556,282	a laser diode electrical signal into a laser diode
H4	USP4,557,551	optical signal and transmit the laser diode optical
H5	USP4,560,234	signal.
H6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11		H11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter
	USP4,580,295	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an
H13	USP4,588,256	optical module comprising a laser diode module to
H14	USP4,589,728	convert a laser diode electrical signal into a laser
H15	USP4,597,631	diode optical signal and transmit the laser diode
H16	USP4,614,836	optical signal.

Dof	Title	Distinction between reference(s) and claim(s)
Ref		
I1 _	USP4,629,270	I1 and I2 do not disclose, at least, an optical module
I2		comprising a laser diode module to convert a laser
ļ	USP4,634,239	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
I3		I3 does not disclose, at least, an optical module
		comprising a single circuit board on which a serial
		connector and a laser diode electrical signal
	USP4,641,371	converter are mounted, and to which a laser diode
ļ		module and a photo diode module are electrically
		connected proximate to a first edge of the circuit
}	•	board.
I4	USP4,647,148	I4 through I16 do not disclose, at least, an optical
I5	USP4,652,976	module comprising a laser diode module to convert
I6	USP4,663,240	a laser diode electrical signal into a laser diode
I7	USP4,663,603	optical signal and transmit the laser diode optical
18	USP4,678,264	signal.

<u> 19</u>	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical
J2	USP4,762,388	module comprising a laser diode module to convert
J3	USP4,767,179	a laser diode electrical signal into a laser diode
J4	USP4,772,931	optical signal and transmit the laser diode optical
J5	USP4,779,952	signal.
J6	USP4,789,218	
J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
K1		K1 does not disclose, at least, an optical module
	USP4,840,451	comprising a laser diode electrical signal converter
	USP4,040,431	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
K2	USP4,844,581	K2 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical

K4	USP4,847,771	module comprising a laser diode module to convert
K5	USP4,849,944	a laser diode electrical signal into a laser diode
K6	USP4,857,002	optical signal and transmit the laser diode optical
K7	USP4,862,327	signal.
K8	USP4,872,212	
K9	USP4,872,736	
K10	USP4,881,789	K10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K11	USP4,884,336	K11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
K12	USP4,897,711	K12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an
K14	USP4,927,225	optical module comprising a laser diode module to
K15	USP4,944,568	convert a laser diode electrical signal into a laser
K16	USP4,945,448	diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical
L2	USP4,955,817	module comprising a laser diode module to convert
L3	USP4,963,104	a laser diode electrical signal into a laser diode
L4	USP4,967,312	optical signal and transmit the laser diode optical signal.
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical
L7	USP4,979,794	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical
L9	USP4,989,934	module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical
L11	USP4,991,062	module comprising a laser diode module to convert

L12	USP5,002,495	a laser diode electrical signal into a laser diode
L13	USP5,004,434	optical signal and transmit the laser diode optical
L14	USP5,006,286	signal.
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical
M2	USP5,035,641	module comprising a laser diode module to convert
M3	USP5,040,993	a laser diode electrical signal into a laser diode
M4	USP5,041,025	optical signal and transmit the laser diode optical signal.
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an
M7	USP5,045,635	optical module comprising a laser diode module to
M8	USP5,045,971	convert a laser diode electrical signal into a laser
M9	USP5,046,955	diode optical signal and transmit the laser diode
M10	USP5,060,373	optical signal.
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
N1		N1 does not disclose, at least, an optical module
ŀ	USP5,091,991	comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
N2		N2 does not disclose, at least, an optical module
l	11005 002 070	comprising a laser diode electrical signal converter
	USP5,093,879	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical

N4	USP5,101,463	module comprising a laser diode module to convert
N5	USP5,104,243	a laser diode electrical signal into a laser diode
N6	USP5,107,404	optical signal and transmit the laser diode optical
N7	USP5,108,294	signal.
N8	USP5,109,453	
N9	USP5,113,467	N9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an
N11	USP5,117,476	optical module comprising a laser diode module to
N12	USP5,118,362	convert a laser diode electrical signal into a laser
N13	USP5,118,904	diode optical signal and transmit the laser diode
N14	USP5,120,578	optical signal.
N15	USP5,122,893	N15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical
N17	USP5,125,849	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N19	USP5,132,871	N19 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
01	USP5,134,677	O1 through O3 do not disclose, at least, an optical
O2	USP5,134,679	module comprising a laser diode module to convert
O3		a laser diode electrical signal into a laser diode
	USP5,136,063	optical signal and transmit the laser diode optical
		signal.
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical
O5		module comprising a laser diode electrical signal
	USP5,136,603	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
06	USP5,138,537	O6 through O8 do not disclose, at least, an optical
07	USP5,138,678	module comprising a laser diode module to convert

O8	USP5,140,663	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
09	USP5,155,786	O9 and O10 do not disclose, at least, an optical
O10	USP5,157,769	module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
O11	USP5,167,139	O11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
O12	USP5,168,537	O12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
O13	USP5,170,146	O13 through O16 do not disclose, at least, an
O14	USP5,171,167	optical module comprising a laser diode module to
O15	USP5,173,059	convert a laser diode electrical signal into a laser
O16	USP5,183,404	diode optical signal and transmit the laser diode
O17	USP5,183,405	optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical
P2	USP5,202,536	module comprising a laser diode module to convert
P3	USP5,207,597	a laser diode electrical signal into a laser diode
P4	USP5,212,752	optical signal and transmit the laser diode optical signal.
P5	USP5,212,754	P5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical
P7	USP5,225,760	module comprising a laser diode module to convert
P8	USP5,233,676	a laser diode electrical signal into a laser diode
P9	USP5,233,674	optical signal and transmit the laser diode optical
P10	USP5,234,353	signal.
P11	USP5,238,426	
P12	USP5,241,614	P12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
P13	USP5,247,532	P13 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode

		module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical
P15	USP5,259,054	module comprising a laser diode module to convert
P16	USP5,262,923	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
P17	USP5,271,079	P17 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Q1		Q1 does not disclose, at least, an optical module
	USP5,274,729	comprising a laser diode module to convert a laser
	USF 3,274,729	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
Q2		Q2 does not disclose, at least, an optical module
	USP5,285,466	comprising a laser diode electrical signal converter
	001 3,203,100	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
Q3		Q3 does not disclose, at least, an optical module
	USP5,285,511	comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
Q4		Q4 does not disclose, at least, an optical module
	USP5,285,512	comprising a laser diode electrical signal converter
		to convert serial data, received from a motherboard, into a laser diode electrical signal.
05	11005 206 207	Q5 through Q16 do not disclose, at least, an optical
Q5	USP5,286,207	module comprising a laser diode module to convert
Q6	USP5,286,247	a laser diode electrical signal into a laser diode
Q7	USP5,288,247	optical signal and transmit the laser diode optical
Q8	USP5,289,347	signal.
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182 USP5,311,408	$\dashv$
Q13		$\dashv$
Q14	USP5,315,679	$\dashv$
Q15	USP5,317,663	
Q16	USP5,321,819	

Re	f Title	Distinction between reference(s) and claim(s)

R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical
R2	USP5,333,221	module comprising a laser diode module to convert
R3		a laser diode electrical signal into a laser diode
	USP5,333,225	optical signal and transmit the laser diode optical
	, ,	signal.
R4		R4 does not disclose, at least, an optical module
i	LICD5 227 201	comprising a laser diode electrical signal converter
	USP5,337,391	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical
R6		module comprising a laser diode module to convert
	USP5,340,340	a laser diode electrical signal into a laser diode
	031 3,340,340	optical signal and transmit the laser diode optical
		signal.
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical
R8		module comprising a laser diode electrical signal
	USP5,345,530	converter to convert serial data, received from a
<u></u>		motherboard, into a laser diode electrical signal.
R9		R9 does not disclose, at least, an optical module
		comprising a single circuit board on which a serial
	11005 252 264	connector and a laser diode electrical signal
	USP5,353,364	converter are mounted, and to which a laser diode
-		module and a photo diode module are electrically
-		connected proximate to a first edge of the circuit
R10	HSD5 252 624	board.  R10 through R12 do not disclose, at least, an
	USP5,353,634	optical module comprising a laser diode module to
R11	USP5,356,300	convert a laser diode electrical signal into a laser
K12	USP5,357,402	diode optical signal and transmit the laser diode
	031 5,557,402	optical signal.
R13		R13 does not disclose, at least, an optical module
		comprising a laser diode electrical signal converter
	USP5,361,244	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an
R15	USP5,366,664	optical module comprising a laser diode module to
R16		convert a laser diode electrical signal into a laser
	USP5,372,515	diode optical signal and transmit the laser diode
	, , , , , , , , , , , , , , , , , , , ,	optical signal.
		Option Signar.

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical
S2	USP5,383,793	module comprising a laser diode module to convert
S3	USP5,388,995	a laser diode electrical signal into a laser diode
S4	USP5,390,268	optical signal and transmit the laser diode optical

S5	USP5,393,249	signal.
S6	USP5,397,242	
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	S10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
S11	USP5,416,668	S11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical
S14	USP5,419,717	module comprising a laser diode module to convert
S15	USP5,424,573	a laser diode electrical signal into a laser diode
S16	USP5,428,703	optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
T1		T1 does not disclose, at least, an optical module
	USP5,428,704	comprising a laser diode electrical signal converter
	031 3,420,704	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical
T3		module comprising a laser diode module to convert
	USP5,443,390	a laser diode electrical signal into a laser diode
	001 3,443,370	optical signal and transmit the laser diode optical
		signal.
T4	1	T4 does not disclose, at least, an optical module
	USP5,446,814	comprising a laser diode electrical signal converter
	051 5,440,014	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
T5		This reference does not qualify as prior art.
	USP5,452,387	Applicants have claimed priority to Japanese
	031 3,432,367	Application No. 06-086691, filed on April 25,
		1994, in Japan.
T6		T6 does not disclose, at least, an optical module
	USP5,454,080	comprising a laser diode module to convert a laser
	0353,434,000	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.

T7		T7 does not disclose, at least, an optical module
	LICDS 455 702	comprising a laser diode electrical signal converter
	USP5,455,703	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical
T9		module comprising a laser diode module to convert
	11005 460 222	a laser diode electrical signal into a laser diode
	USP5,469,332	optical signal and transmit the laser diode optical
		signal.
T10	USP5,470,257	These references do not qualify as prior art.
T11		Applicants have claimed priority to Japanese
	USP5,470,259	Application No. 06-086691, filed on April 25,
		1994, in Japan.
T12		T12 does not disclose, at least, an optical module
	USP5,475,734	comprising a laser diode module to convert a laser
	031 3,473,734	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
T13	USP5,477,418	These references do not qualify as prior art.
T14		Applicants have claimed priority to Japanese
	USP5,478,253	Application No. 06-086691, filed on April 25,
		1994, in Japan.
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical
T16		module comprising a laser diode module to convert
1	USP5,478,260	a laser diode electrical signal into a laser diode
	USF 3,470,200	optical signal and transmit the laser diode optical
		signal.

Ref	Title	Distinction between reference(s) and claim(s)
U1		U1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser
	USP5,481,634	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
U2		U2 does not disclose, at least, an optical module
	LIONS 402 650	comprising a laser diode electrical signal converter
	USP5,482,658	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical
U4		module comprising a laser diode module to convert
		a laser diode electrical signal into a laser diode
	USP5,491,613	optical signal and transmit the laser diode optical
		signal.
U5		This reference does not qualify as prior art.
	USP5,491,712	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.

U6	USP5,494,747	U6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an
U12	USP5,507,668	optical module comprising a laser diode module to
U13	USP5,526,235	convert a laser diode electrical signal into a laser
U14	USP5,527,991	diode optical signal and transmit the laser diode optical signal.
U15	USP5,534,662	These references do not qualify as prior art.
U16	USP5,535,296	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V2	USP5,545,845	These references do not qualify as prior art.
V3	USP5,546,281	Applicants have claimed priority to Japanese
V4	USP5,547,385	Application No. 06-086691, filed on April 25, 1994, in Japan.
V5	USP5,548,641	V5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese

		Application No. 06-086691, filed on April 25,
		1994, in Japan.
V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical
V8	USP5,554,037	module comprising a laser diode module to convert
V9		a laser diode electrical signal into a laser diode
	USP5,567,167	optical signal and transmit the laser diode optical
		signal.
V10		V10 does not disclose, at least, an optical module
	USP5,577,064	comprising a laser diode electrical signal converter
	031 3,377,004	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
V11		V11 does not disclose, at least, an optical module
	USP5,580,269	comprising a laser diode module to convert a laser
	051 3,300,207	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
V12		This reference does not qualify as prior art.
	USP5,588,850	Applicants have claimed priority to Japanese
	031 3,366,630	Application No. 06-086691, filed on April 25,
		1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical
V14		module comprising a laser diode module to convert
	USP5,599,595	a laser diode electrical signal into a laser diode
		optical signal and transmit the laser diode optical
3715		signal.  V15 does not disclose, at least, an optical module
V15		comprising a laser diode electrical signal converter
	USP5,600,470	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
V16		This reference does not qualify as prior art.
V 10	USP5,613,860	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.
		1777, III Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art.
W2	USP5,631,998	Applicants have claimed priority to Japanese
W3	USP5,653,596	Application No. 06-086691, filed on April 25, 1994, in Japan.
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
W5	USP5,675,428	These references do not qualify as prior art.
W6	USP5,687,267	Applicants have claimed priority to Japanese
W7	USP5,717,533	Application No. 06-086691, filed on April 25,

W8	USP5,724,729	1994, in Japan.
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art.
X2	USP5,879,173	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical
X4	EP 0 232792 A1	module comprising a laser diode module to convert
X5	EP.0 228 278	a laser diode electrical signal into a laser diode
X6	EP.0 305112 A2	optical signal and transmit the laser diode optical signal.
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical
X8	D. 10 31 1 601 112	module comprising a laser diode electrical signal
120	EP.0 413 489 A2	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
X9		X9 does not disclose, at least, an optical module
	EP.0 437 161 A2	comprising a laser diode module to convert a laser
	EP.0 437 101 A2	diode electrical signal into a laser diode optical
}		signal and transmit the laser diode optical signal.
X10		X10 does not disclose, at least, an optical module
	EP.0 456 298 B1	comprising a laser diode electrical signal converter
	EF.0 430 298 B1	to convert serial data, received from a
·		motherboard, into a laser diode electrical signal.
X11		X11 does not disclose, at least, an optical module
	EP.0 530 791 A2	comprising a laser diode module to convert a laser
1	131.0 330 771112	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an
X13	EP.0 588 014 A2	optical module comprising a laser diode electrical
X14	77.0.600.645.44	signal converter to convert serial data, received
	EP.0 600 645 A1	from a motherboard, into a laser diode electrical
371.5		signal.
X15		X15 does not disclose, at least, an optical module
	EP.0 613 032 A2	comprising a single circuit board on which a serial
		connector and a laser diode electrical signal
		converter are mounted, and to which a laser diode

		module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an
X17	EP.0 656 696 A1	optical module comprising a laser diode module to
X18		convert a laser diode electrical signal into a laser
	EP.0 662 259 B1	diode optical signal and transmit the laser diode
		optical signal.
X19	EP.442 608 A2	X19 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical
X21	JP.1-237783	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical
Y2	JP.2-181710	module comprising a laser diode electrical signal
Y3	JP.2-278212	converter to convert serial data, received from a
Y4	JP.2-87837	motherboard, into a laser diode electrical signal.
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical
Y6	JP.3-94869	module comprising a laser diode module to convert
Y7		a laser diode electrical signal into a laser diode
	JP.4-109593	optical signal and transmit the laser diode optical
		signal.
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical
Y9	JP.4-165312	module comprising a laser diode electrical signal
Y10	JP.4-211208	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an
Y12	JP.4-229962	optical module comprising a laser diode module to
Y13		convert a laser diode electrical signal into a laser
	JP.4-230978	diode optical signal and transmit the laser diode
		optical signal.
Y14		Y14 does not disclose, at least, an optical module
	JP.4-234715	comprising a laser diode electrical signal converter
	J1 .T-2JT / 1.5 	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an
Y16	JP.4-50901	optical module comprising a laser diode module to
Y17	JP.4-87809	convert a laser diode electrical signal into a laser

Y18	JP.5-052802	diode optical signal and transmit the laser diode optical signal.
Y19	JP.5-134147	Y19 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical
Z2	JP.5-188250	module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Z3	JP.5-211379	Z3 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Z4	JP.5-218581	Z4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Z5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical
Z6	JP.5-70955	module comprising a laser diode module to convert
Z7	JP.61-158046	a laser diode electrical signal into a laser diode
Z8	JP.61-188385	optical signal and transmit the laser diode optical signal.
Z9	JP.63-009325	Z9 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an
Z11	JP.63-65967	optical module comprising a laser diode module to
Z12	JP.63-65978	convert a laser diode electrical signal into a laser
Z13	JP.63-82998	diode optical signal and transmit the laser diode
Z14	U-3-20458	optical signal.
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)

AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an
AA2	U-63-16496	optical module comprising a laser diode module to
AA3	U-63-65967	convert a laser diode electrical signal into a laser
AA4	U-63-65978	diode optical signal and transmit the laser diode
AA5	U-63-82998	optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB2	Ronald LSoderstrom et al.,"An optical Date Link using a CD laser", SPIE Vol. 1577 High Speed Fiber Networks and Channels, pp. 163-173, 1991	BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode electrical
BB3	BCP,Inc. "Gigabits Over Multimode Optical Fiber"no date	signal converter to convert serial data, received
BB4	Ronald L.Soderstrom et al., "CD laser optical Date Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	from a motherboard, into a laser diode electrical signal.
BB5	FDDI Low-Cost Fiber Phyiscal Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	BB5 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
BB6	HP Module HFBR-5103, FDDI Data Sheet,http://www.hp.com/HP- COMP/fiber/hfbr5103.html,Jun.11,1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module to convert
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System".www.patents.ibm.com/tdbs/tdb?ℴ=93A +60964,April 1993	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB8	IBM, "A Proposal for a New High Performance "OptopElectronics Enterprise Oct.1992 ANSI Meeting,Oct.13,1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode electrical signal
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	BB10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	BB11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for	CC1 does not disclose, at least, an optical module
	Desktop FDDI Applications, "June 23, 1992.	comprising a laser diode module to convert a laser

		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
		This reference does not qualify as prior art.
CC2	Sun Microsystems computer Co. et al., Gigabit	Applicants have claimed priority to Japanese
002	Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	Application No. 06-086691, filed on April 25,
		1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Sandards?" no date.	CC3 through CC5 do not disclose, at least, an
CC4	AMP "PC Board Connectors", Product Guide 82759,	optical module comprising a laser diode electrical
	pp. 7104-7108, Catalog E2750 issued Jun. 1991	signal converter to convert serial data, received
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex	from a motherboard, into a laser diode electrical
003	Transceiver" Catalog 65922,Dec.1993.	signal.
		CC6 does not disclose, at least, an optical module
000	AMPHENOL Engineering News vol. 7 No. 6., pp241,	comprising a laser diode module to convert a laser
CC6	264-65, Nov. 1994	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
		CC7 does not disclose, at least, an optical module
007	Baldwin and Kellerman, "Fiber Optic Module	comprising a laser diode electrical signal converter
CC7	Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
660	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	CC8 and CC9 do not disclose, at least, an optical
CC8		module comprising a laser diode module to convert
	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	a laser diode electrical signal into a laser diode
CC9		optical signal and transmit the laser diode optical
		signal.
	Martin H. Weik, "Communication Standard Dictionary" p.454. definition of LED, Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module
0010		comprising a laser diode electrical signal converter
CC10		to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
	Edward R.Salmon, Encapsulation of Electronic Devices and Components, Marcel Deckker Inc., New York, 1987	CC11 does not disclose, at least, an optical module
00		comprising a laser diode module to convert a laser
CC11		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
	I	

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conducive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode module to
DD2	HEADS UpSumitomo Electric Lightwave joins Other in Announcement,May 11,1995	convert a laser diode electrical signal into a laser
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	diode optical signal and transmit the laser diode optical signal.
DD4	Shortwave Opto Assembly, IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev. 1, Jan. 6, 1993	DD4 and DD5 do not disclose, at least, an optical module comprising a laser diode electrical signal
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association, 1990.	DD6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser

DD7	Ronald LSoderstrom et al., A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD) FOC/LAN' 87&MFOC-WEST,pp.383-385,no date.	diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.  DD7 through DD9 do not disclose, at least, an optical module comprising a laser diode electrical
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
DD9	Ronald L.Soderstrom et al., Optical Components and Electronic Packaging for High Performance Optical Date Links, THE RESEARCH INVESTMENT, p. 19-28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD), American National Standards Institute, 1996.	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber, Van Nostrand Reinhold Publishing, 1983	
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer date links", Fiber Optic Datacom and Computer Networks, SPIE-The International Society for Optical Engineerdings, Vol. 1577, pp. 174-181, 1988	
EE5	David A.Knodel et al.,"Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34, No.7B, Dec. 1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge, IBM Technical Disclosure Bulletin, March 1987, https://www.delphion.com/tdb?o=87A%2060509 last visited Mar.8,2005.	

EE9	K.P.Jackson et al.,"High-Density,Array,Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings,IEEE Computer Society Press.
	TDB:Stackable Circuit Card Packaging within a Logic Cage,IBM Technical
EE10	Disclosure Bulletin,Dec.1992,https://www.delphion.co
	m/tbds/tdb?o=92A%2063485,last visited Mar.8,2005
EE11	Jeff Hechi, The Laser Guidebook, 2nd ed., McGraw Hill, Inc., 1992

## Claim Chart for Claims 180-181 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical
A2	USP2,899,669	module comprising a laser diode module to convert
A3	USP3,264,601	a laser diode electrical signal into a laser diode
A4	USP3,332,860	optical signal and transmit the laser diode optical
<b>A</b> 5	USP3,474,380	signal.
A6	USP3,497,866	
<b>A</b> 7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
A14		A14 does not disclose, at least, an optical module
	USP3,805,116	comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical
A16	USP3,976,877	module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical
B2	USP4,047,242	module comprising a laser diode module to convert
B3		a laser diode electrical signal into a laser diode
	USP4,156,903	optical signal and transmit the laser diode optical
		signal.
B4		B4 does not disclose, at least, an optical module
	USP4,161,650	comprising a laser diode electrical signal converter
		to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical
B6	USP4,176,897	module comprising a laser diode module to convert
B7		a laser diode electrical signal into a laser diode
	USP4,217,019	optical signal and transmit the laser diode optical
l		signal.
B8	USP4,217,488	B8 does not disclose, at least, an optical module
		comprising a laser diode electrical signal converter

		to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical
B10		module comprising a laser diode module to convert
	11004 224 069	a laser diode electrical signal into a laser diode
	USP4,234,968	optical signal and transmit the laser diode optical
		signal.
B11	USP4,249,266	B11 through B13 do not disclose, at least, an
B12	USP4,252,402	optical module comprising a laser diode electrical
B13		signal converter to convert serial data, received
	USP4,257,124	from a motherboard, into a laser diode electrical
		signal.
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical
B15		module comprising a laser diode module to convert
	USP4,273,413	a laser diode electrical signal into a laser diode
	0514,273,413	optical signal and transmit the laser diode optical
		signal.
B16		B16 does not disclose, at least, an optical module
	LICDA 276 656	comprising a laser diode electrical signal converter
	USP4,276,656	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
C2	USP4,295,181	C2 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical
C4	USP4,330,870	module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected.
C5	USP4,345,808	C5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C6	USP4,347,655	C6 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode

		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		module and a photo diode module are electrically
		connected.
C7		C7 does not disclose, at least, an optical module
	USP4,357,606	comprising a laser diode electrical signal converter
	0314,337,000	to convert serial data, received from a motherboard,
Ì		into a laser diode electrical signal.
C8		C8 does not disclose, at least, an optical module
	11004 260 249	comprising a laser diode module to convert a laser
	USP4,360,248	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
C9		C9 does not disclose, at least, an optical module
		comprising a single circuit board on which a serial
	1100 1 2 6 6 5 6 5	connector and a laser diode electrical signal
	USP4,366,565	converter are mounted, and to which a laser diode
		module and a photo diode module are electrically
		connected.
C10	USP4,369,494	C10 through C15 do not disclose, at least, an
C11	USP4,380,360	optical module comprising a laser diode module to
C12	USP4,388,671	convert a laser diode electrical signal into a laser
C13	USP4,393,516	diode optical signal and transmit the laser diode
C14	USP4,398,073	optical signal.
C15	USP4,398,780	
C16		C16 does not disclose, at least, an optical module
	USP4,399,563	comprising a single circuit board on which a serial
		connector and a laser diode electrical signal
		converter are mounted, and to which a laser diode
		module and a photo diode module are electrically
		connected.
L	<u> </u>	the contraction of the contracti

Ref	Title	Distinction between reference(s) and claim(s)
D1		D1 does not disclose, at least, an optical module
	USP4,408,273	comprising a laser diode module to convert a laser
	0314,408,273	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical
D3	USP4,427,879	module comprising a laser diode electrical signal
D4	USP4,430,699	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
D5		D5 does not disclose, at least, an optical module
	LICD4 424 527	comprising a laser diode module to convert a laser
ŀ	USP4,434,537	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
D6		D6 does not disclose, at least, an optical module
	USP4,437,190	comprising a laser diode electrical signal converter
		to convert serial data, received from a motherboard,

		into a laser diode electrical signal.
D7	USP4,439,006	D7 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical
D9	USP4,449,244	module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D10	USP4,449,784	D10 through D13 do not disclose, at least, an
D11	USP4,453,903	optical module comprising a laser diode module to
D12	USP4,459,658	convert a laser diode electrical signal into a laser
D13	USP4,461,537	diode optical signal and transmit the laser diode optical signal.
D14	USP4,470,154	D14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D15	USP4,486,059	D15 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
D16	USP4,493,113	D16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical
E3	USP4,505,035	module comprising a laser diode module to convert
E4	USP4,506,937	a laser diode electrical signal into a laser diode
E5	USP4,510,553	optical signal and transmit the laser diode optical signal.
E6	USP4,511,207	E6 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected.

F.7	HOD4 514 506	E7 through E14 do not displace at least on anti1
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical
E8	USP4,516,204	module comprising a laser diode module to convert
E9	USP4,519,670	a laser diode electrical signal into a laser diode
E10	USP4,519,672	optical signal and transmit the laser diode optical
E11	USP4,519,673	signal.
E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	E15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
E16	USP4,529,266	E16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical
F2	USP4,531,810	module comprising a laser diode module to convert
F3	USP4,533,208	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical
	(333,200	signal.
F4		F4 does not disclose, at least, an optical module
	USP4,533,209	comprising a laser diode electrical signal converter
	(SET 1,555,20)	to convert serial data, received from a motherboard, into a laser diode electrical signal.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical
F6	USP45,34,617	module comprising a laser diode module to convert
F7	USP4,535,233	a laser diode electrical signal into a laser diode
F8	USP4,537,468	optical signal and transmit the laser diode optical signal.
F9		F9 does not disclose, at least, an optical module
	USP4,539,476	comprising a laser diode electrical signal converter
	001 4,337,170	to convert serial data, received from a motherboard, into a laser diode electrical signal.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical
F11	USP4,540,246	module comprising a laser diode module to convert
F12	USP4,541,036	a laser diode electrical signal into a laser diode
F13	USP4,541,685	optical signal and transmit the laser diode optical
F14	USP4,542,076	signal.
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical
G3	USP4,545,077	module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected.
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical
G5	USP4,545,643	module comprising a laser diode module to convert
G6	USP4,545,644	a laser diode electrical signal into a laser diode
G7	USP4,545,645	optical signal and transmit the laser diode optical
G8	USP4,548,465	signal.
G9	USP4,548,466	G9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G10	USP4,548,467	G10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G11	USP4,549,782	G11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an
G13	USP4,550,975	optical module comprising a laser diode module to
G14	USP4,553,811	convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G15	USP4,553,813	G15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G16	USP4,553,814	G16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical
H2	USP4,556,281	module comprising a laser diode module to convert

H3	USP4,556,282	a laser diode electrical signal into a laser diode
H4	USP4,557,551	optical signal and transmit the laser diode optical
H5	USP4,560,234	signal.
H6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an
H13	USP4,588,256	optical module comprising a laser diode module to
H14	USP4,589,728	convert a laser diode electrical signal into a laser
H15	USP4,597,631	diode optical signal and transmit the laser diode
H16	USP4,614,836	optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module
I2		comprising a laser diode module to convert a laser
	USP4,634,239	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
I3	USP4,641,371	I3 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected.
I4	USP4,647,148	I4 through I16 do not disclose, at least, an optical
I5	USP4,652,976	module comprising a laser diode module to convert
I6	USP4,663,240	a laser diode electrical signal into a laser diode
I7	USP4,663,603	optical signal and transmit the laser diode optical
18	USP4,678,264	signal.
I9	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical
J2	USP4,762,388	module comprising a laser diode module to convert
J3	USP4,767,179	a laser diode electrical signal into a laser diode
J4	USP4,772,931	optical signal and transmit the laser diode optical
J5	USP4,779,952	signal.
J6	USP4,789,218	
J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
K1		K1 does not disclose, at least, an optical module
:	USP4,840,451	comprising a laser diode electrical signal converter
	0314,640,431	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
K2		K2 does not disclose, at least, an optical module
		comprising a single circuit board on which a serial
	USP4,844,581	connector and a laser diode electrical signal
		converter are mounted, and to which a laser diode
		module and a photo diode module are electrically
1/2	11004 947 711	connected.  K3 through K9 do not disclose, at least, an optical
K3 K4	USP4,847,711 USP4,847,771	module comprising a laser diode module to convert
K5	USP4,849,944	a laser diode electrical signal into a laser diode
K6	USP4,857,002	optical signal and transmit the laser diode optical
K7	USP4,862,327	signal.
K8	USP4,872,212	1
K9	USP4,872,736	<del>-</del>
K10	001 1,072,720	K10 does not disclose, at least, an optical module
		comprising a laser diode electrical signal converter
	USP4,881,789	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
K11	USP4,884,336	K11 does not disclose, at least, an optical module

		comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
K12	USP4,897,711	K12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an
K14	USP4,927,225	optical module comprising a laser diode module to
K15	USP4,944,568	convert a laser diode electrical signal into a laser
K16	USP4,945,448	diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical
L2	USP4,955,817	module comprising a laser diode module to convert
L3	USP4,963,104	a laser diode electrical signal into a laser diode
L4	USP4,967,312	optical signal and transmit the laser diode optical signal.
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical
L7	USP4,979,794	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical
L9	USP4,989,934	module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical
L11	USP4,991,062	module comprising a laser diode module to convert
L12	USP5,002,495	a laser diode electrical signal into a laser diode
L13	USP5,004,434	optical signal and transmit the laser diode optical
L14	USP5,006,286	signal.
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1		M1 through M4 do not disclose, at least, an optical
M2	USP5,035,641	module comprising a laser diode module to convert
M3	USP5,040,993	a laser diode electrical signal into a laser diode

M4	USP5,041,025	optical signal and transmit the laser diode optical signal.
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an
M7	USP5,045,635	optical module comprising a laser diode module to
M8	USP5,045,971	convert a laser diode electrical signal into a laser
M9	USP5,046,955	diode optical signal and transmit the laser diode
M10	USP5,060,373	optical signal.
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
N1		N1 does not disclose, at least, an optical module
	USP5,091,991	comprising a laser diode module to convert a laser
	051 3,051,551	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
N2		N2 does not disclose, at least, an optical module
	USP5,093,879	comprising a laser diode electrical signal converter
		to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical
N4	USP5,101,463	module comprising a laser diode module to convert
N5	USP5,104,243	a laser diode electrical signal into a laser diode
N6	USP5,107,404	optical signal and transmit the laser diode optical
N7	USP5,108,294	signal.
N8	USP5,109,453	
N9		N9 does not disclose, at least, an optical module
	USP5,113,467	comprising a laser diode electrical signal converter
	031 3,113,407	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an

N11	USP5,117,476	optical module comprising a laser diode module to
N12	USP5,118,362	convert a laser diode electrical signal into a laser
N13	USP5,118,904	diode optical signal and transmit the laser diode
N14	USP5,120,578	optical signal.
N15	USP5,122,893	N15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical
N17	USP5,125,849	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N19	USP5,132,871	N19 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
01	USP5,134,677	O1 through O3 do not disclose, at least, an optical
O2	USP5,134,679	module comprising a laser diode module to convert
O3		a laser diode electrical signal into a laser diode
	USP5,136,063	optical signal and transmit the laser diode optical
		signal.
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical
O5		module comprising a laser diode electrical signal
	USP5,136,603	converter to convert serial data, received from a
L		motherboard, into a laser diode electrical signal.
06	USP5,138,537	O6 through O8 do not disclose, at least, an optical
O7	USP5,138,678	module comprising a laser diode module to convert
O8		a laser diode electrical signal into a laser diode
	USP5,140,663	optical signal and transmit the laser diode optical
		signal.
09	USP5,155,786	O9 and O10 do not disclose, at least, an optical
O10		module comprising a laser diode electrical signal
	USP5,157,769	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
O11		O11 does not disclose, at least, an optical module
	USP5,167,139	comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
O12	USP5,168,537	O12 does not disclose, at least, an optical module

		comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an
O14	USP5,171,167	optical module comprising a laser diode module to
O15	USP5,173,059	convert a laser diode electrical signal into a laser
O16	USP5,183,404	diode optical signal and transmit the laser diode
O17	USP5,183,405	optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical
P2	USP5,202,536	module comprising a laser diode module to convert
P3	USP5,207,597	a laser diode electrical signal into a laser diode
P4	USP5,212,752	optical signal and transmit the laser diode optical signal.
P5	USP5,212,754	P5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical
P7	USP5,225,760	module comprising a laser diode module to convert
P8	USP5,233,676	a laser diode electrical signal into a laser diode
P9	USP5,233,674	optical signal and transmit the laser diode optical
P10	USP5,234,353	signal.
P11	USP5,238,426	7
P12	USP5,241,614	P12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
P13	USP5,247,532	P13 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical
P15	USP5,259,054	module comprising a laser diode module to convert
P16	USP5,262,923	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
P17	USP5,271,079	P17 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Q1		Q1 does not disclose, at least, an optical module
	USP5,274,729	comprising a laser diode module to convert a laser
	USF 3,274,729	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
Q2		Q2 does not disclose, at least, an optical module
<u> </u>	USP5,285,466	comprising a laser diode electrical signal converter
	031 3,263,400	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
Q3		Q3 does not disclose, at least, an optical module
	USP5,285,511	comprising a laser diode module to convert a laser
	031 3,203,311	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
Q4		Q4 does not disclose, at least, an optical module
	USP5,285,512	comprising a laser diode electrical signal converter
	001 3,203,312	to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an optical
Q6	USP5,286,247	module comprising a laser diode module to convert
Q7	USP5,288,247	a laser diode electrical signal into a laser diode
Q8	USP5,289,347	optical signal and transmit the laser diode optical
Q9	USP5,296,813	signal.
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical
R2	USP5,333,221	module comprising a laser diode module to convert
R3		a laser diode electrical signal into a laser diode
	USP5,333,225	optical signal and transmit the laser diode optical
		signal.
R4		R4 does not disclose, at least, an optical module
	USP5,337,391	comprising a laser diode electrical signal converter
		to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical

R6	USP5,340,340	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical
R8	USP5,345,530	module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
R9	USP5,353,364	R9 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an
R11	USP5,356,300	optical module comprising a laser diode module to
R12	USP5,357,402	convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R13	USP5,361,244	R13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an
R15	USP5,366,664	optical module comprising a laser diode module to
R16	USP5,372,515	convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical
S2	USP5,383,793	module comprising a laser diode module to convert
S3	USP5,388,995	a laser diode electrical signal into a laser diode
S4	USP5,390,268	optical signal and transmit the laser diode optical
S5	USP5,393,249	signal.
S6	USP5,397,242	
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	S10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
S11	USP5,416,668	S11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser

		diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical
S14	USP5,419,717	module comprising a laser diode module to convert
S15	USP5,424,573	a laser diode electrical signal into a laser diode
S16	USP5,428,703	optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
T1		T1 does not disclose, at least, an optical module
	USP5,428,704	comprising a laser diode electrical signal converter
	031 3,426,704	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical
T3		module comprising a laser diode module to convert
	USP5,443,390	a laser diode electrical signal into a laser diode
		optical signal and transmit the laser diode optical
ļ <u>.</u>		signal.
T4		T4 does not disclose, at least, an optical module
	USP5,446,814	comprising a laser diode electrical signal converter
	, ,	to convert serial data, received from a
Tre		motherboard, into a laser diode electrical signal.
T5		This reference does not qualify as prior art. Applicants have claimed priority to Japanese
	USP5,452,387	Application No. 06-086691, filed on April 25,
		1994, in Japan.
T6		T6 does not disclose, at least, an optical module
10		comprising a laser diode module to convert a laser
	USP5,454,080	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
T7		T7 does not disclose, at least, an optical module
,	USP5,455,703	comprising a laser diode electrical signal converter
		to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical
T9		module comprising a laser diode module to convert
	USP5,469,332	a laser diode electrical signal into a laser diode
		optical signal and transmit the laser diode optical
		signal.
T10	USP5,470,257	These references do not qualify as prior art.

T11	USP5,470,259	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T12	USP5,475,734	T12 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T13	USP5,477,418	These references do not qualify as prior art.
T14	USP5,478,253	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical
T16	USP5,478,260	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
U1		U1 does not disclose, at least, an optical module
	USP5,481,634	comprising a laser diode module to convert a laser
	0373,481,034	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
U2		U2 does not disclose, at least, an optical module
	USP5,482,658	comprising a laser diode electrical signal converter
ŀ	031 3,462,036	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical
U4		module comprising a laser diode module to convert
	USP5,491,613	a laser diode electrical signal into a laser diode
	0013,171,013	optical signal and transmit the laser diode optical
		signal.
U5		This reference does not qualify as prior art.
	USP5,491,712	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.
U6		U6 does not disclose, at least, an optical module
	USP5,494,747	comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
U7		This reference does not qualify as prior art.
	USP5,499,311	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
T.0		1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, an optical module
		comprising a laser diode electrical signal converter

		to convert serial data, received from a motherboard, into a laser diode electrical signal.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an
U12	USP5,507,668	optical module comprising a laser diode module to
U13	USP5,526,235	convert a laser diode electrical signal into a laser
U14	USP5,527,991	diode optical signal and transmit the laser diode optical signal.
U15	USP5,534,662	These references do not qualify as prior art.
U16	USP5,535,296	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
V1		V1 does not disclose, at least, an optical module
	USP5,535,364	comprising a laser diode module to convert a laser
	031 3,333,304	diode electrical signal into a laser diode optical
ı.		signal and transmit the laser diode optical signal.
V2	USP5,545,845	These references do not qualify as prior art.
V3	USP5,546,281	Applicants have claimed priority to Japanese
V4	USP5,547,385	Application No. 06-086691, filed on April 25,
	031 3,347,383	1994, in Japan.
V5		V5 does not disclose, at least, an optical module
	USP5,548,641	comprising a laser diode module to convert a laser
	031 3,346,041	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
V6		This reference does not qualify as prior art.
	USP5,548,677	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.
V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical
V8	USP5,554,037	module comprising a laser diode module to convert
V9		a laser diode electrical signal into a laser diode
	USP5,567,167	optical signal and transmit the laser diode optical
		signal.
V10		V10 does not disclose, at least, an optical module
	USP5,577,064	comprising a laser diode electrical signal converter
		to convert serial data, received from a

		motherboard, into a laser diode electrical signal.
V11		V11 does not disclose, at least, an optical module
	HCD5 500 260	comprising a laser diode module to convert a laser
	USP5,580,269	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
V12		This reference does not qualify as prior art.
	USP5,588,850	Applicants have claimed priority to Japanese
	031 3,388,830	Application No. 06-086691, filed on April 25,
		1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical
V14	USP5,599,595	module comprising a laser diode module to convert
		a laser diode electrical signal into a laser diode
		optical signal and transmit the laser diode optical
		signal.
V15		V15 does not disclose, at least, an optical module
	USP5,600,470	comprising a laser diode electrical signal converter
		to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
V16		This reference does not qualify as prior art.
	USP5,613,860	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art.
W2	USP5,631,998	Applicants have claimed priority to Japanese
W3	USP5,653,596	Application No. 06-086691, filed on April 25, 1994, in Japan.
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
W5	USP5,675,428	These references do not qualify as prior art.
W6	USP5,687,267	Applicants have claimed priority to Japanese
W7	USP5,717,533	Application No. 06-086691, filed on April 25,
W8	USP5,724,729	1994, in Japan.
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art.
X2	USP5,879,173	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical
X4	EP 0 232792 A1	module comprising a laser diode module to convert
X5	EP.0 228 278	a laser diode electrical signal into a laser diode
X6	EP.0 305112 A2	optical signal and transmit the laser diode optical signal.
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical
X8		module comprising a laser diode electrical signal
	EP.0 413 489 A2	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
X9		X9 does not disclose, at least, an optical module
	EP.0 437 161 A2	comprising a laser diode module to convert a laser
	E1:0437 101 A2	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
X10		X10 does not disclose, at least, an optical module
	EP.0 456 298 B1	comprising a laser diode electrical signal converter
ļ	E1:0 130 250 B1	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
X11		X11 does not disclose, at least, an optical module
	EP.0 530 791 A2	comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an
X13	EP.0 588 014 A2	optical module comprising a laser diode electrical
X14		signal converter to convert serial data, received
	EP.0 600 645 A1	from a motherboard, into a laser diode electrical
371.5		signal.
X15		X15 does not disclose, at least, an optical module
		comprising a single circuit board on which a serial
	EP.0 613 032 A2	connector and a laser diode electrical signal
-		converter are mounted, and to which a laser diode
		module and a photo diode module are electrically
V16	EP.0 652 696 A1	connected.
X16		X16 through X18 do not disclose, at least, an optical module comprising a laser diode module to
X17	EP.0 656 696 A1	convert a laser diode electrical signal into a laser
X18	ED 0 662 250 D1	
	EP.0 662 259 B1	diode optical signal and transmit the laser diode
X19		optical signal.  X19 does not disclose, at least, an optical module
Ala	EP.442 608 A2	comprising a laser diode electrical signal converter
	E1 .442 000 A2	to convert serial data, received from a
	<u> </u>	to convert serial data, received from a

		motherboard, into a laser diode electrical signal.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical
X21	JP.1-237783	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical
Y2	JP.2-181710	module comprising a laser diode electrical signal
Y3	JP.2-278212	converter to convert serial data, received from a
Y4	JP.2-87837	motherboard, into a laser diode electrical signal.
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical
Y6	JP.3-94869	module comprising a laser diode module to convert
Y7		a laser diode electrical signal into a laser diode
	JP.4-109593	optical signal and transmit the laser diode optical
		signal.
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical
Y9	JP.4-165312	module comprising a laser diode electrical signal
Y10	JP.4-211208	converter to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an
Y12	JP.4-229962	optical module comprising a laser diode module to
Y13		convert a laser diode electrical signal into a laser
	JP.4-230978	diode optical signal and transmit the laser diode
		optical signal.
Y14		Y14 does not disclose, at least, an optical module
	JP.4-234715	comprising a laser diode electrical signal converter
	31.4-254715	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an
Y16	JP.4-50901	optical module comprising a laser diode module to
Y17	JP.4-87809	convert a laser diode electrical signal into a laser
Y18	JP.5-052802	diode optical signal and transmit the laser diode
	31.3 032002	optical signal.
Y19		Y19 does not disclose, at least, an optical module
	JP.5-134147	comprising a laser diode electrical signal converter
	Jr.3-13414/	to convert serial data, received from a
		motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical

TP.5-188250   module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.     Z3	Z2		module commissing a locar diode electrical signal
Motherboard, into a laser diode electrical signal.   Z3 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.   Z4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.   Z5 JP.5-290913   Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module to convert   Z7 JP.61-158046   a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical   Z8 JP.61-188285   JP.61-1		ID 5 100050	
Z3 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.  Z4 Z4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.  Z5 JP.5-290913 Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.  Z5 JP.5-70955 module comprising a laser diode module to convert a laser diode electrical signal and transmit the laser diode optical optical signal and transmit the laser diode optical		JP.5-188250	
JP.5-211379  comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.  Z4			
diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.  Z4	Z3		
diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.  Z4		IP 5-211379	
Z4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.  Z5 JP.5-290913 Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical		31.3 211377	
JP.5-218581  comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.  Z5 JP.5-290913  Z6 JP.5-70955  module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical			
to convert serial data, received from a motherboard, into a laser diode electrical signal.  Z5 JP.5-290913 Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical	Z4		
to convert serial data, received from a motherboard, into a laser diode electrical signal.  Z5 JP.5-290913 Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical	1	ID 5 219591	
Z5JP.5-290913Z5 through Z8 do not disclose, at least, an opticalZ6JP.5-70955module comprising a laser diode module to convertZ7JP.61-158046a laser diode electrical signal into a laser diodeZ8JP.61 188385optical signal and transmit the laser diode optical		JI .5-210301	
Z5JP.5-290913Z5 through Z8 do not disclose, at least, an opticalZ6JP.5-70955module comprising a laser diode module to convertZ7JP.61-158046a laser diode electrical signal into a laser diodeZ8JP.61 188385optical signal and transmit the laser diode optical			motherboard, into a laser diode electrical signal.
Z7 JP.61-158046 a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical	Z5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical
Z8 p. 61, 199395 optical signal and transmit the laser diode optical	Z6	JP.5-70955	
	Z7	JP.61-158046	a laser diode electrical signal into a laser diode
	Z8	ID 61 199295	
		JP.01-188383	signal.
Z9 does not disclose, at least, an optical module	Z9		Z9 does not disclose, at least, an optical module
comprising a single circuit board on which a serial			comprising a single circuit board on which a serial
JP.63-009325 connector and a laser diode electrical signal		ID 62 000225	connector and a laser diode electrical signal
converter are mounted, and to which a laser diode		JP.63-009325	converter are mounted, and to which a laser diode
module and a photo diode module are electrically			module and a photo diode module are electrically
connected.			
Z10 JP.63-16496 Z10 through Z19 do not disclose, at least, an		JP.63-16496	
Z11 JP.63-65967 optical module comprising a laser diode module to	Z11	JP.63-65967	
Z12 JP.63-65978 convert a laser diode electrical signal into a laser	Z12	JP.63-65978	
Z13 JP.63-82998 diode optical signal and transmit the laser diode	Z13	JP.63-82998	
Z14 U-3-20458 optical signal.	Z14	U-3-20458	optical signal.
Z15 U-3-94869	Z15	U-3-94869	
Z16 U-4-87809	Z16	U-4-87809	
Z17 U-5-052802	717	U-5-052802	
Z18 U-5-70955			1
Z19 U-61-158046		U-5-70955	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an
AA2	U-63-16496	optical module comprising a laser diode module to
AA3	U-63-65967	convert a laser diode electrical signal into a laser
AA4	U-63-65978	diode optical signal and transmit the laser diode
AA5	U-63-82998	optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
BB1		BB1 does not disclose, at least, an optical module
	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	comprising a laser diode module to convert a laser
	Transcorrer 160. 1774 promining data sheet.p.2 10	diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

BB2 BB3	Ronald LSoderstrom et al.,"An optical Date Link using a CD laser",SPIE Vol.1577 High Speed Fiber Networks and Channels,pp.163-173,1991 BCP,Inc."Gigabits Over Multimode Optical Fiber"no date Ronald L.Soderstrom et al., "CD laser optical Date Links for Workstation and Midrange	BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
7004	Computers",IEEE p.505-509,1993.	č
BB5	FDDI Low-Cost Fiber Phyiscal Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	BB5 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected.
BB6	HP Module HFBR-5103, FDDI Data Sheet,http://www.hp.com/HP- COMP/fiber/hfbr5103.html,Jun.11,1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module to convert
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System".www.patents.ibm.com/tdbs/tdb?ℴ=93A +60964,April 1993	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB8	IBM, "A Proposal for a New High Performance "OptopElectronics Enterprise Oct.1992 ANSI Meeting,Oct.13,1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode electrical signal
BB9	IBM, et al,"GLM Family",FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	BB10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	BB11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Sandards?" no date.	CC3 through CC5 do not disclose, at least, an
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	optical module comprising a laser diode electrical signal converter to convert serial data, received
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922,Dec.1993.	from a motherboard, into a laser diode electrical signal.
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module

		comprising a laser diode module to convert a laser
	·	diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
		CC7 does not disclose, at least, an optical module
	Baldwin and Kellerman, "Fiber Optic Module	comprising a laser diode electrical signal converter
CC7	Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	to convert serial data, received from a motherboard,
	, , , ,	into a laser diode electrical signal.
COL	Block and Gaio "Optical Link Card guide/Retention	CC8 and CC9 do not disclose, at least, an optical
CC8	Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	module comprising a laser diode module to convert
		a laser diode electrical signal into a laser diode
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	optical signal and transmit the laser diode optical
		signal.
		CC10 does not disclose, at least, an optical module
	Martin H. Weik,"Communication Standard Dictionary"p.454.definition of LED,Van Nostrand Reinhold Co.	comprising a laser diode electrical signal converter
CC10		to convert serial data, received from a motherboard,
		into a laser diode electrical signal.
		CC11 does not disclose, at least, an optical module
CC11	Edward R.Salmon, Encapsulation of Electronic Devices and Components, Marcel Deckker Inc., New York, 1987	comprising a laser diode module to convert a laser
		diode electrical signal into a laser diode optical
		signal and transmit the laser diode optical signal.
Ц	<u> </u>	

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conducive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode module to
DD2	HEADS UpSumitomo Electric Lightwave joins Other in Announcement, May 11,1995	convert a laser diode electrical signal into a laser
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	diode optical signal and transmit the laser diode optical signal.
DD4	Shortwave Opto Assembly, IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev.1, Jan.6, 1993	DD4 and DD5 do not disclose, at least, an optical module comprising a laser diode electrical signal
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.	DD6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
DD7	Ronald LSoderstrom et al., A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD) FOC/LAN'87&MFOC-WEST,pp.383-385,no date.	DD7 through DD9 do not disclose, at least, an optical module comprising a laser diode electrical
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
DD9	Ronald L.Soderstrom et al., Optical Components and Electronic Packaging for High Performance Optical Date Links, THE RESEARCH INVESTMENT, p. 19-28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a single circuit board on which a serial

		connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected.
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute, 1996.	EE1 through EE11 not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber, Van Nostrand Reinhold Publishing, 1983	optical signal and transmit the laser diode optical signal.
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer date links", Fiber Optic Datacom and Computer Networks, SPIE-The International Society for Optical Engineerdings, Vol. 1577, pp. 174-181, 1988	
EE5	David A.Knodel et al.,"Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34, No.7B, Dec. 1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge, IBM Technical Disclosure Bulletin, March 1987, https://www.delphion.com/tdb?o=87A%2060509, last visited Mar. 8, 2005.	
EE9	K.P.Jackson et al., "High-Density, Array, Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings, IEEE Computer Society Press.	
EE10	TDB:Stackable Circuit Card Packaging within a Logic Cage,IBM Technical Disclosure Bulletin,Dec.1992,https://www.delphion.com/tbds/tdb?o=92A%2063485,last visited Mar.8,2005	<u>.</u>
EE11	Jeff Hechi,The Laser Guidebook,2nd ed.,McGraw Hill,Inc.,1992	

## Claim Chart for Claims 182-183 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A16 do not disclose, at least, a module
A2	USP2,899,669	cap comprising a first cap portion and a second cap
A3	USP3,264,601	portion to protect a laser diode module and a photo
A4	USP3,332,860	diode module of an optical module, respectively,
A5	USP3,474,380	such that the first cap portion and the second cap
A6	USP3,497,866	portion are each formed having a cavity with a
A7	USP3,523,269	projection formed therein, and into each of the
A8	USP3,670,290	cavities one of a laser diode module and a photo
A9	USP3,673,545	diode module is at least partially inserted when the
A10	USP3,706,869	module cap is attached to the optical module.
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	
A14	USP3,805,116	
A15	USP3,809,908	
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B16 do not disclose, at least, a module
B2	USP4,047,242	cap comprising a first cap portion and a second cap
B3	USP4,156,903	portion to protect a laser diode module and a photo
B4	USP4,161,650	diode module of an optical module, respectively,
B5	USP4,167,303	such that the first cap portion and the second cap
B6	USP4,176,897	portion are each formed having a cavity with a
B7	USP4,217,019	projection formed therein, and into each of the
B8	USP4,217,488	cavities one of a laser diode module and a photo
B9	USP4,226,491	diode module is at least partially inserted when the
B10	USP4,234,968	module cap is attached to the optical module.
B11	USP4,249,266	
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	
B15	USP4,273,413	
B16	USP4,276,656	

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 through C16 do not disclose, at least, a module
C2	USP4,295,181	cap comprising a first cap portion and a second cap
C3	USP4,301,543	portion to protect a laser diode module and a photo
C4	USP4,330,870	diode module of an optical module, respectively,

C5	USP4,345,808
C6	USP4,347,655
C7	USP4,357,606
C8	USP4,360,248
C9	USP4,366,565
C10	USP4,369,494
C11	USP4,380,360
C12	USP4,388,671
C13	USP4,393,516
C14	USP4,398,073
C15	USP4,398,780
C16	USP4,399,563

such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 through D16 do not disclose, at least, a module
D2	USP4,422,088	cap comprising a first cap portion and a second cap
D3	USP4,427,879	portion to protect a laser diode module and a photo
D4	USP4,430,699	diode module of an optical module, respectively,
D5	USP4,434,537	such that the first cap portion and the second cap
D6	USP4,437,190	portion are each formed having a cavity with a
D7	USP4,439,006	projection formed therein, and into each of the
D8	USP4,446,515	cavities one of a laser diode module and a photo
D9	USP4,449,244	diode module is at least partially inserted when the
D10	USP4,449,784	module cap is attached to the optical module.
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	
D15	USP4,486,059	
D16	USP4,493,113	

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 through E16 do not disclose, at least, a module
E2_	USP4,502,130	cap comprising a first cap portion and a second cap
E3	USP4,505,035	portion to protect a laser diode module and a photo
E4	USP4,506,937	diode module of an optical module, respectively,
E5	USP4,510,553	such that the first cap portion and the second cap
E6	USP4,511,207	portion are each formed having a cavity with a
E7	USP4,514,586	projection formed therein, and into each of the
E8_	USP4,516,204	cavities one of a laser diode module and a photo
E9	USP4,519,670	diode module is at least partially inserted when the
E10	USP4,519,672	module cap is attached to the optical module.
E11	USP4,519,673	

E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	
E16	USP4,529,266	

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F16 do not disclose, at least, a module
F2	USP4,531,810	cap comprising a first cap portion and a second cap
F3	USP4,533,208	portion to protect a laser diode module and a photo
F4	USP4,533,209	diode module of an optical module, respectively,
F5	USP4,534,616	such that the first cap portion and the second cap
F6	USP45,34,617	portion are each formed having a cavity with a
F7	USP4,535,233	projection formed therein, and into each of the
F8	USP4,537,468	cavities one of a laser diode module and a photo
F9	USP4,539,476	diode module is at least partially inserted when the
F10	USP4,540,237	module cap is attached to the optical module.
F11	USP4,540,246	
F12	USP4,541,036	
F13	USP4,541,685	
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 through G16 do not disclose, at least, a module
G2	USP4,545,074	cap comprising a first cap portion and a second cap
G3	USP4,545,077	portion to protect a laser diode module and a photo
G4	USP4,545,642	diode module of an optical module, respectively,
G5	USP4,545,643	such that the first cap portion and the second cap
G6	USP4,545,644	portion are each formed having a cavity with a
G7	USP4,545,645	projection formed therein, and into each of the
G8	USP4,548,465	cavities one of a laser diode module and a photo
G9	USP4,548,466	diode module is at least partially inserted when the
G10	USP4,548,467	module cap is attached to the optical module.
G11	USP4,549,782	
G12	USP4,549,783	
G13	USP4,550,975	·
G14	USP4,553,811	
G15	USP4,553,813	
G16	USP4,553,814	

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H16 do not disclose, at least, a module
H2	USP4,556,281	cap comprising a first cap portion and a second cap
H3	USP4,556,282	portion to protect a laser diode module and a photo
H4	USP4,557,551	diode module of an optical module, respectively,
H5	USP4,560,234	such that the first cap portion and the second cap
H6	USP4,563,057	portion are each formed having a cavity with a
H7	USP4,566,753	projection formed therein, and into each of the
H8	USP4,568,145	cavities one of a laser diode module and a photo
H9	USP4,569,569	diode module is at least partially inserted when the
H10	USP4,573,760	module cap is attached to the optical module.
H11	USP4,580,295	
H12	USP4,580,872	
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	Il through I16 do not disclose, at least, a module
I2	USP4,634,239	cap comprising a first cap portion and a second cap
I3	USP4,641,371	portion to protect a laser diode module and a photo
I4	USP4,647,148	diode module of an optical module, respectively,
I5	USP4,652,976	such that the first cap portion and the second cap
<b>I</b> 6	USP4,663,240	portion are each formed having a cavity with a
I7	USP4,663,603	projection formed therein, and into each of the
18	USP4,678,264	cavities one of a laser diode module and a photo
19	USP4,679,883	diode module is at least partially inserted when the
I10	USP4,695,106	module cap is attached to the optical module.
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J16 do not disclose, at least, a module
J2	USP4,762,388	cap comprising a first cap portion and a second cap
J3	USP4,767,179	portion to protect a laser diode module and a photo
J4	USP4,772,931	diode module of an optical module, respectively,
J5	USP4,779,952	such that the first cap portion and the second cap
J6	USP4,789,218	portion are each formed having a cavity with a

J7	USP4,798,430	projection formed therein, and into each of the
J8	USP4,798,440	cavities one of a laser diode module and a photo
J9	USP4,807,006	diode module is at least partially inserted when the
J10	USP4,807,955	module cap is attached to the optical module.
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 through K16 do not disclose, at least, a module
K2	USP4,844,581	cap comprising a first cap portion and a second cap
K3	USP4,847,711	portion to protect a laser diode module and a photo
K4	USP4,847,771	diode module of an optical module, respectively,
K5	USP4,849,944	such that the first cap portion and the second cap
K6	USP4,857,002	portion are each formed having a cavity with a
K7	USP4,862,327	projection formed therein, and into each of the
K8	USP4,872,212	cavities one of a laser diode module and a photo
K9	USP4,872,736	diode module is at least partially inserted when the
K10	USP4,881,789	module cap is attached to the optical module.
K11	USP4,884,336	
K12	USP4,897,711	
K13	USP4,906,197	
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L16 do not disclose, at least, a module
L2	USP4,955,817	cap comprising a first cap portion and a second cap
L3	USP4,963,104	portion to protect a laser diode module and a photo
L4	USP4,967,312	diode module of an optical module, respectively,
L5	USP4,977,329	such that the first cap portion and the second cap
L6	USP4,979,793	portion are each formed having a cavity with a
L7	USP4,979,794	projection formed therein, and into each of the
L8	USP4,986,625	cavities one of a laser diode module and a photo
L9	USP4,989,934	diode module is at least partially inserted when the
L10	USP4,990,104	module cap is attached to the optical module.
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	

L14	USP5,006,286	
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M16 do not disclose, at least, a module
M2	USP5,035,641	cap comprising a first cap portion and a second cap
M3	USP5,040,993	portion to protect a laser diode module and a photo
M4	USP5,041,025	diode module of an optical module, respectively,
M5	USP5,043,775	such that the first cap portion and the second cap
M6	USP5,044,982	portion are each formed having a cavity with a
M7	USP5,045,635	projection formed therein, and into each of the
M8	USP5,045,971	cavities one of a laser diode module and a photo
M9	USP5,046,955	diode module is at least partially inserted when the
M10	USP5,060,373	module cap is attached to the optical module.
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	
M16	USP5,086,422	

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 through N19 do not disclose, at least, a module
N2	USP5,093,879	cap comprising a first cap portion and a second cap
N3	USP5,094,623	portion to protect a laser diode module and a photo
N4	USP5,101,463	diode module of an optical module, respectively,
N5	USP5,104,243	such that the first cap portion and the second cap
N6	USP5,107,404	portion are each formed having a cavity with a
N7	USP5,108,294	projection formed therein, and into each of the
N8	USP5,109,453	cavities one of a laser diode module and a photo
N9	USP5,113,467	diode module is at least partially inserted when the
N10	USP5,116,239	module cap is attached to the optical module.
N11	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	
N16	USP5,124,885	
N17	USP5,125,849	
N18	USP5,127,071	
N19	USP5,132,871	

Ref	Title	Distinction between reference(s) and claim(s)
01	USP5,134,677	O1 through O17 do not disclose, at least, a module
O2	USP5,134,679	cap comprising a first cap portion and a second cap
O3	USP5,136,063	portion to protect a laser diode module and a photo
04	USP5,136,152	diode module of an optical module, respectively,
O5	USP5,136,603	such that the first cap portion and the second cap
06	USP5,138,537	portion are each formed having a cavity with a
O7	USP5,138,678	projection formed therein, and into each of the
O8	USP5,140,663	cavities one of a laser diode module and a photo
09	USP5,155,786	diode module is at least partially inserted when the
O10	USP5,157,769	module cap is attached to the optical module.
O11	USP5,167,139	
O12	USP5,168,537	
O13	USP5,170,146	
O14	USP5,171,167	
O15	USP5,173,059	
O16	USP5,183,404	
O17	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P17 do not disclose, at least, a module
P2	USP5,202,536	cap comprising a first cap portion and a second cap
P3	USP5,207,597	portion to protect a laser diode module and a photo
P4	USP5,212,752	diode module of an optical module, respectively,
P5	USP5,212,754	such that the first cap portion and the second cap
P6	USP5,218,519	portion are each formed having a cavity with a
P7	USP5,225,760	projection formed therein, and into each of the
P8	USP5,233,676	cavities one of a laser diode module and a photo
P9	USP5,233,674	diode module is at least partially inserted when the
P10	USP5,234,353	module cap is attached to the optical module.
P11	USP5,238,426	
P12	USP5,241,614	
P13	USP5,247,532	
P14	USP5,259,052	
P15	USP5,259,054	
P16	USP5,262,923	
P17	USP5,271,079	

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 through Q16 do not disclose, at least, a module
Q2	USP5,285,466	cap comprising a first cap portion and a second cap
Q3	USP5,285,511	portion to protect a laser diode module and a photo

Q4	USP5,285,512
Q5	USP5,286,207
Q6	USP5,286,247
Q7	USP5,288,247
Q8	USP5,289,347
Q9	USP5,296,813
Q10	USP5,299,089
Q11	USP5,304,069
Q12	USP5,305,182
Q13	USP5,311,408
Q14	USP5,315,679
Q15	USP5,317,663
Q16	USP5,321,819

diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.

Ref	Title
R1	USP5,329,604
R2	USP5,333,221
R3	USP5,333,225
R4	USP5,337,391
R5	USP5,337,396
R6	USP5,340,340
R7	USP5,345,524
R8	USP5,345,530
R9	USP5,353,364
R10	USP5,353,634
R11	USP5,356,300
R12	USP5,357,402
R13	USP5,361,244
R14	USP5,361,318
R15	USP5,366,664
R16	USP5,372,515

Distinction between reference(s) and claim(s)
R1 through R16 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S16 do not disclose, at least, a module
S2	USP5,383,793	cap comprising a first cap portion and a second cap
S3	USP5,388,995	portion to protect a laser diode module and a photo
S4	USP5,390,268	diode module of an optical module, respectively,
S5	USP5,393,249	such that the first cap portion and the second cap
<b>S</b> 6	USP5,397,242	portion are each formed having a cavity with a
S7	USP5,398,154	projection formed therein, and into each of the
S8	USP5,398,295	cavities one of a laser diode module and a photo
S9	USP5,408,384	diode module is at least partially inserted when the
S10	USP5,414,787	module cap is attached to the optical module.

S11	USP5,416,668	
S12	USP5,416,870	
S13	USP5,416,872	
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 through T4 do not disclose, at least, a module
T2	USP5,434,747	cap comprising a first cap portion and a second cap
T3	USP5,443,390	portion to protect a laser diode module and a photo
T4		diode module of an optical module, respectively,
		such that the first cap portion and the second cap
		portion are each formed having a cavity with a
	USP5,446,814	projection formed therein, and into each of the
		cavities one of a laser diode module and a photo
		diode module is at least partially inserted when the
		module cap is attached to the optical module.
T5		This reference does not qualify as prior art.
	USP5,452,387	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25,
		Application No. 00-080091, fried on April 23, 1994, in Japan.
T6	USP5,454,080	T6 through T9 do not disclose, at least, a module
T7	USP5,455,703	cap comprising a first cap portion and a second cap
T8	USP5,463,532	portion to protect a laser diode module and a photo
T9	031 3,403,332	diode module of an optical module, respectively,
19		such that the first cap portion and the second cap
		portion are each formed having a cavity with a
	USP5,469,332	projection formed therein, and into each of the
	0013,103,332	cavities one of a laser diode module and a photo
		diode module is at least partially inserted when the
		module cap is attached to the optical module.
T10	USP5,470,257	These references do not qualify as prior art.
T11		Applicants have claimed priority to Japanese
	USP5,470,259	Application No. 06-086691, filed on April 25,
		1994, in Japan.
T12		T12 does not disclose, at least, a module cap
		comprising a first cap portion and a second cap
	HGD5 475 724	portion to protect a laser diode module and a photo
		diode module of an optical module, respectively,
	USP5,475,734	such that the first cap portion and the second cap portion are each formed having a cavity with a
		projection formed therein, and into each of the
		cavities one of a laser diode module and a photo
		diode module is at least partially inserted when the
L		diode module is at least partially inscried when the

		module cap is attached to the optical module.
T13	USP5,477,418	These references do not qualify as prior art.
T14		Applicants have claimed priority to Japanese
	USP5,478,253	Application No. 06-086691, filed on April 25,
		1994, in Japan.
T15	USP5,478,259	T15 and T16 do not disclose, at least, a module cap
T16		comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively,
	USP5,478,260	such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.

Ref	Title	Distinction between reference(s) and claim(s)
Ul	USP5,481,634	U1 through U4 do not disclose, at least, a module
U2	USP5,482,658	cap comprising a first cap portion and a second cap
U3	USP5,487,678	portion to protect a laser diode module and a photo
U4	USP5,491,613	diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the
		cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

	<del></del>	
U8		U8 does not disclose, at least, a module cap
		comprising a first cap portion and a second cap
		portion to protect a laser diode module and a photo
		diode module of an optical module, respectively,
	USP5,499,312	such that the first cap portion and the second cap
	001 5,477,512	portion are each formed having a cavity with a
		projection formed therein, and into each of the
		cavities one of a laser diode module and a photo
		diode module is at least partially inserted when the
		module cap is attached to the optical module.
U9		This reference does not qualify as prior art.
	USP5,504,657	Applicants have claimed priority to Japanese
	031 3,304,037	Application No. 06-086691, filed on April 25,
		1994, in Japan.
U10	USP5,506,921	U10 through U14 not disclose, at least, a module
U11	USP5,506,922	cap comprising a first cap portion and a second cap
U12	USP5,507,668	portion to protect a laser diode module and a photo
U13	USP5,526,235	diode module of an optical module, respectively,
U14		such that the first cap portion and the second cap
		portion are each formed having a cavity with a
ŀ	USP5,527,991	projection formed therein, and into each of the
İ	001 3,327,771	cavities one of a laser diode module and a photo
		diode module is at least partially inserted when the
		module cap is attached to the optical module.
U15	USP5,534,662	These references do not qualify as prior art.
U16		Applicants have claimed priority to Japanese
	USP5,535,296	Application No. 06-086691, filed on April 25,
		1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
V2	USP5,545,845	These references do not qualify as prior art.
V3	USP5,546,281	Applicants have claimed priority to Japanese
V4	USP5,547,385	Application No. 06-086691, filed on April 25, 1994, in Japan.
V5	USP5,548,641	V5 does not disclose, at least, a module cap

V6	USP5,548,677	comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.  This reference does not qualify as prior art.  Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V11 do not disclose, at least, a module
V8	USP5,554,037	cap comprising a first cap portion and a second cap
V9	USP5,567,167	portion to protect a laser diode module and a photo
V10	USP5,577,064	diode module of an optical module, respectively,
V11	USP5,580,269	such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 through V15 do not disclose, at least, a
V14	USP5,599,595	module cap comprising a first cap portion and a
V15	USP5,600,470	second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art.

W2	USP5,631,998	Applicants have claimed priority to Japanese
W3	USP5,653,596	Application No. 06-086691, filed on April 25,
L	USF 3,033,390	1994, in Japan.
W4	USP5,659,459	W4 does not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
W5	USP5,675,428	These references do not qualify as prior art.
W6	USP5,687,267	Applicants have claimed priority to Japanese
W7	USP5,717,533	Application No. 06-086691, filed on April 25,
W8	USP5,724,729	1994, in Japan.
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art.
X2	USP5,879,173	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.
X3	DE.4239124 A1	X3 through X21 do not disclose, at least, a module
X4	EP 0 232792 A1	cap comprising a first cap portion and a second cap
X5	EP.0 228 278	portion to protect a laser diode module and a photo
X6	EP.0 305112 A2	diode module of an optical module, respectively,
X7	EP.0 314 651 A2	such that the first cap portion and the second cap
X8	EP.0 413 489 A2	portion are each formed having a cavity with a
X9	EP.0 437 161 A2	projection formed therein, and into each of the
X10	EP.0 456 298 B1	cavities one of a laser diode module and a photo
X11	EP.0 530 791 A2	diode module is at least partially inserted when the
X12	EP.0 535 473 A1	module cap is attached to the optical module.
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	

X16	EP.0 652 696 A1	
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	
X20	WO 94/12900	
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y19 do not disclose, at least, a module
Y2	JP.2-181710	cap comprising a first cap portion and a second cap
Y3	JP.2-278212	portion to protect a laser diode module and a photo
Y4_	JP.2-87837	diode module of an optical module, respectively,
Y5	JP.3-20458	such that the first cap portion and the second cap
Y6_	JP.3-94869	portion are each formed having a cavity with a
Y7_	JP.4-109593	projection formed therein, and into each of the
Y8	JP.4-122905	cavities one of a laser diode module and a photo
Y9_	JP.4-165312	diode module is at least partially inserted when the
Y10	JP.4-211208	module cap is attached to the optical module.
Y11	JP.4-221207	
Y12	JP.4-229962	
Y13	JP.4-230978	
Y14	JP.4-234715	
Y15	JP.4-270305	
Y16	JP.4-50901	
Y17	JP.4-87809	
Y18	JP.5-052802	
Y19	JP.5-134147	

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 through Z19 do not disclose, at least, a module
Z2	JP.5-188250	cap comprising a first cap portion and a second cap
Z3	JP.5-211379	portion to protect a laser diode module and a photo
Z4	JP.5-218581	diode module of an optical module, respectively,
<b>Z</b> 5	JP.5-290913	such that the first cap portion and the second cap
Z6	JP.5-70955	portion are each formed having a cavity with a
<b>Z</b> 7	JP.61-158046	projection formed therein, and into each of the
Z8	JP.61-188385	cavities one of a laser diode module and a photo
Z9	JP.63-009325	diode module is at least partially inserted when the
Z10	JP.63-16496	module cap is attached to the optical module.
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	

Z15	U-3-94869
Z16	U-4-87809
Z17	U-5-052802
Z18	U-5-70955
Z19	U-61-158046

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, a
AA2	U-63-16496	module cap comprising a first cap portion and a
AA3	U-63-65967	second cap portion to protect a laser diode module
AA4	U-63-65978	and a photo diode module of an optical module,
AA5	U-63-82998	respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 through BB11 do not disclose, at least, a
BB2	Ronald LSoderstrom et al.,"An optical Date Link using a CD laser", SPIE Vol. 1577 High Speed Fiber Networks and Channels, pp. 163-173, 1991	module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module,
BB3	BCP,Inc."Gigabits Over Multimode Optical Fiber"no date	respectively, such that the first cap portion and the
BB4	Ronald L.Soderstrom et al., "CD laser optical Date Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	second cap portion are each formed having a cavity with a projection formed therein, and into each of
BB5	FDDI Low-Cost Fiber Phyiscal Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	the cavities one of a laser diode module and a photo diode module is at least partially inserted when the
BB6	HP Module HFBR-5103, FDDI Data Sheet,http://www.hp.com/HP- COMP/fiber/hfbr5103.html,Jun.11,1998	module cap is attached to the optical module.
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System".www.patents.ibm.com/tdbs/tdb?ℴ=93A +60964,April 1993	
BB8	IBM, "A Proposal for a New High Performance "OptopElectronics Enterprise Oct. 1992 ANSI Meeting, Oct. 13, 1992	
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for	CC1 does not disclose, at least, a module cap
CC1	Desktop FDDI Applications, "June 23, 1992.	comprising a first cap portion and a second cap

CC2	Sun Microsystems computer Co. et al., Gigabit	portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.  This reference does not qualify as prior art.  Applicants have claimed priority to Japanese
	Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Sandards?" no date.	CC3 through CC11 do not disclose, at least, a
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	diode module is at least partially inserted when the module cap is attached to the optical module.
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	inodule cap is attached to the optical module.
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454. definition of LED, Van Nostrand Reinhold Co.	
CC11	Edward R.Salmon, Encapsulation of Electronic Devices and Components, Marcel Deckker Inc., New York, 1987	

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conducive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD11 do not disclose, at least, a module cap comprising a first cap portion and a
DD2	HEADS UpSumitomo Electric Lightwave joins Other in Announcement, May 11,1995	second cap portion to protect a laser diode module
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	and a photo diode module of an optical module, respectively, such that the first cap portion and the
DD4	Shortwave Opto Assembly, IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev. 1, Jan. 6, 1993	second cap portion are each formed having a cavity with a projection formed therein, and into each of
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	the cavities one of a laser diode module and a pho diode module is at least partially inserted when the module cap is attached to the optical module.
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association, 1990.	module cap is attached to the optical module.
DD7	Ronald LSoderstrom et al., A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD) FOC/LAN'87&MFOC-WEST,pp.383-385,no date.	
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	

VESTMENT,p.19-
dem 1998

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD), American National Standards Institute, 1996.	EE1 through EE11 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber, Van Nostrand Reinhold Publishing, 1983	and a photo diode module of an optical module, respectively, such that the first cap portion and the
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	second cap portion are each formed having a cavity with a projection formed therein, and into each of
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer date links", Fiber Optic Datacom and Computer Networks, SPIE-The International Society for Optical Engineerdings, Vol. 1577, pp. 174-181, 1988	the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
EE5	David A.Knodel et al.,"Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34, No.7B, Dec. 1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge, IBM Technical Disclosure Bulletin, March 1987, https://www.delphion.com/tdb?o=87A%2060509, last visited Mar.8,2005.	
EE9	K.P.Jackson et al.,"High-Density,Array,Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings,IEEE Computer Society Press.	
EE10	TDB:Stackable Circuit Card Packaging within a Logic Cage,IBM Technical Disclosure Bulletin,Dec.1992,https://www.delphion.com/tbds/tdb?o=92A%2063485,last visited Mar.8,2005	
EE11	Jeff Hechi, The Laser Guidebook, 2nd ed., McGraw Hill, Inc., 1992	

## Claim Chart for Claim 184 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
Al	Re.32,502	Al through Al6 do not disclose, at least, a module
A2	USP2,899,669	cap comprising a laser diode projection formed in a
A3	USP3,264,601	laser diode cavity and a photo diode projection
A4	USP3,332,860	formed in a photo diode cavity, such that the
<b>A</b> 5	USP3,474,380	module cap is formed having the laser diode cavity
A6	USP3,497,866	into which a laser diode module is at least partially
A7	USP3,523,269	inserted and the photo diode cavity into which a
A8	USP3,670,290	photo diode module is at least partially inserted.
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	
A14	USP3,805,116	
A15	USP3,809,908	
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B16 do not disclose, at least, a module
B2	USP4,047,242	cap comprising a laser diode projection formed in a
B3	USP4,156,903	laser diode cavity and a photo diode projection
B4	USP4,161,650	formed in a photo diode cavity, such that the
B5	USP4,167,303	module cap is formed having the laser diode cavity
B6	USP4,176,897	into which a laser diode module is at least partially
B7	USP4,217,019	inserted and the photo diode cavity into which a
B8	USP4,217,488	photo diode module is at least partially inserted.
B9	USP4,226,491	
B10	USP4,234,968	
B11	USP4,249,266	
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	
B15	USP4,273,413	
B16	USP4,276,656	

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 through C16 do not disclose, at least, a module
C2	USP4,295,181	cap comprising a laser diode projection formed in a
C3	USP4,301,543	laser diode cavity and a photo diode projection
C4	USP4,330,870	formed in a photo diode cavity, such that the

C5	USP4,345,808	module cap is formed having the laser diode cavity
C6	USP4,347,655	into which a laser diode module is at least partially
C7	USP4,357,606	inserted and the photo diode cavity into which a
C8	USP4,360,248	photo diode module is at least partially inserted.
C9	USP4,366,565	
C10	USP4,369,494	
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 through D16 do not disclose, at least, a module
D2	USP4,422,088	cap comprising a laser diode projection formed in a
D3	USP4,427,879	laser diode cavity and a photo diode projection
D4	USP4,430,699	formed in a photo diode cavity, such that the
D5	USP4,434,537	module cap is formed having the laser diode cavity
D6	USP4,437,190	into which a laser diode module is at least partially
D7	USP4,439,006	inserted and the photo diode cavity into which a
D8	USP4,446,515	photo diode module is at least partially inserted.
D9	USP4,449,244	
D10	USP4,449,784	
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	
D15	USP4,486,059	
D16	USP4,493,113	

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 through E16 do not disclose, at least, a module
E2	USP4,502,130	cap comprising a laser diode projection formed in a
E3	USP4,505,035	laser diode cavity and a photo diode projection
E4	USP4,506,937	formed in a photo diode cavity, such that the
E5	USP4,510,553	module cap is formed having the laser diode cavity
E6	USP4,511,207	into which a laser diode module is at least partially
E7	USP4,514,586	inserted and the photo diode cavity into which a
E8	USP4,516,204	photo diode module is at least partially inserted.
E9	USP4,519,670	
E10	USP4,519,672	
E11	USP4,519,673	

E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	
E16	USP4,529,266	

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F16 do not disclose, at least, a module
F2	USP4,531,810	cap comprising a laser diode projection formed in a
F3	USP4,533,208	laser diode cavity and a photo diode projection
F4	USP4,533,209	formed in a photo diode cavity, such that the
F5	USP4,534,616	module cap is formed having the laser diode cavity
F6	USP45,34,617	into which a laser diode module is at least partially
F7	USP4,535,233	inserted and the photo diode cavity into which a
F8	USP4,537,468	photo diode module is at least partially inserted.
F9	USP4,539,476	
F10	USP4,540,237	
F11	USP4,540,246	
F12	USP4,541,036	
F13	USP4,541,685	
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 through G16 do not disclose, at least, a module
G2	USP4,545,074	cap comprising a laser diode projection formed in a
G3	USP4,545,077	laser diode cavity and a photo diode projection
G4	USP4,545,642	formed in a photo diode cavity, such that the
G5	USP4,545,643	module cap is formed having the laser diode cavity
G6	USP4,545,644	into which a laser diode module is at least partially
G7	USP4,545,645	inserted and the photo diode cavity into which a
G8	USP4,548,465	photo diode module is at least partially inserted.
G9	USP4,548,466	
G10	USP4,548,467	
G11	USP4,549,782	
G12	USP4,549,783	
G13	USP4,550,975	
G14	USP4,553,811	
G15	USP4,553,813	
G16	USP4,553,814	

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H16 do not disclose, at least, a module
H2	USP4,556,281	cap comprising a laser diode projection formed in a
H3	USP4,556,282	laser diode cavity and a photo diode projection
H4	USP4,557,551	formed in a photo diode cavity, such that the
H5	USP4,560,234	module cap is formed having the laser diode cavity
H6	USP4,563,057	into which a laser diode module is at least partially
H7	USP4,566,753	inserted and the photo diode cavity into which a
H8	USP4,568,145	photo diode module is at least partially inserted.
Н9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	
H12	USP4,580,872	
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 through I16 do not disclose, at least, a module
I2	USP4,634,239	cap comprising a laser diode projection formed in a
I3	USP4,641,371	laser diode cavity and a photo diode projection
<b>I</b> 4	USP4,647,148	formed in a photo diode cavity, such that the
15	USP4,652,976	module cap is formed having the laser diode cavity
I6	USP4,663,240	into which a laser diode module is at least partially
I7	USP4,663,603	inserted and the photo diode cavity into which a
18	USP4,678,264	photo diode module is at least partially inserted.
I9	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J16 do not disclose, at least, a module
J2	USP4,762,388	cap comprising a laser diode projection formed in a
J3	USP4,767,179	laser diode cavity and a photo diode projection
J4	USP4,772,931	formed in a photo diode cavity, such that the
J5	USP4,779,952	module cap is formed having the laser diode cavity
J6	USP4,789,218	into which a laser diode module is at least partially

J7	USP4,798,430	inserted and the photo diode cavity into which a
Ј8	USP4,798,440	photo diode module is at least partially inserted.
Ј9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	

D C	77'.1	D' (' (' 1 ( ) C ( ) ( ) ( ) ( )
Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 through K16 do not disclose, at least, a module
K2	USP4,844,581	cap comprising a laser diode projection formed in a
K3	USP4,847,711	laser diode cavity and a photo diode projection
K4	USP4,847,771	formed in a photo diode cavity, such that the
K5	USP4,849,944	module cap is formed having the laser diode cavity
K6	USP4,857,002	into which a laser diode module is at least partially
K7	USP4,862,327	inserted and the photo diode cavity into which a
K8	USP4,872,212	photo diode module is at least partially inserted.
K9	USP4,872,736	
K10	USP4,881,789	
K11	USP4,884,336	
K12	USP4,897,711	,
K13	USP4,906,197	
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L16 do not disclose, at least, a module
L2	USP4,955,817	cap comprising a laser diode projection formed in a
L3	USP4,963,104	laser diode cavity and a photo diode projection
L4	USP4,967,312	formed in a photo diode cavity, such that the
L5	USP4,977,329	module cap is formed having the laser diode cavity
L6	USP4,979,793	into which a laser diode module is at least partially
L7	USP4,979,794	inserted and the photo diode cavity into which a
L8	USP4,986,625	photo diode module is at least partially inserted.
L9	USP4,989,934	
L10	USP4,990,104	
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	

L14	USP5,006,286	
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M16 do not disclose, at least, a module
M2	USP5,035,641	cap comprising a laser diode projection formed in a
M3	USP5,040,993	laser diode cavity and a photo diode projection
M4	USP5,041,025	formed in a photo diode cavity, such that the
M5	USP5,043,775	module cap is formed having the laser diode cavity
M6	USP5,044,982	into which a laser diode module is at least partially
M7	USP5,045,635	inserted and the photo diode cavity into which a
M8	USP5,045,971	photo diode module is at least partially inserted.
M9	USP5,046,955	
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	
M16	USP5,086,422	

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 through N19 do not disclose, at least, a module
N2	USP5,093,879	cap comprising a laser diode projection formed in a
N3	USP5,094,623	laser diode cavity and a photo diode projection
N4	USP5,101,463	formed in a photo diode cavity, such that the
N5	USP5,104,243	module cap is formed having the laser diode cavity
N6	USP5,107,404	into which a laser diode module is at least partially
N7	USP5,108,294	inserted and the photo diode cavity into which a
N8	USP5,109,453	photo diode module is at least partially inserted.
N9	USP5,113,467	
N10	USP5,116,239	
N11_	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	
N16	USP5,124,885	
N17	USP5,125,849	
N18	USP5,127,071	
N19	USP5,132,871	

Ref	Title	Distinction between reference(s) and claim(s)
01	USP5,134,677	O1 through O17 do not disclose, at least, a module
O2	USP5,134,679	cap comprising a laser diode projection formed in a
O3	USP5,136,063	laser diode cavity and a photo diode projection
O4	USP5,136,152	formed in a photo diode cavity, such that the
O5	USP5,136,603	module cap is formed having the laser diode cavity
06	USP5,138,537	into which a laser diode module is at least partially
O7	USP5,138,678	inserted and the photo diode cavity into which a
O8	USP5,140,663	photo diode module is at least partially inserted.
09	USP5,155,786	
O10	USP5,157,769	
011	USP5,167,139	
O12	USP5,168,537	
O13	USP5,170,146	
014	USP5,171,167	
O15	USP5,173,059	
016	USP5,183,404	
017	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P17 do not disclose, at least, a module
P2	USP5,202,536	cap comprising a laser diode projection formed in a
P3	USP5,207,597	laser diode cavity and a photo diode projection
P4	USP5,212,752	formed in a photo diode cavity, such that the
P5	USP5,212,754	module cap is formed having the laser diode cavity
P6	USP5,218,519	into which a laser diode module is at least partially
P7	USP5,225,760	inserted and the photo diode cavity into which a
P8	USP5,233,676	photo diode module is at least partially inserted.
P9	USP5,233,674	
P10	USP5,234,353	,
P11	USP5,238,426	
P12	USP5,241,614	
P13	USP5,247,532	
P14	USP5,259,052	
P15	USP5,259,054	
P16	USP5,262,923	
P17	USP5,271,079	

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 through Q16 do not disclose, at least, a module
Q2	USP5,285,466	cap comprising a laser diode projection formed in a
Q3	USP5,285,511	laser diode cavity and a photo diode projection

Q4	USP5,285,512
Q5	USP5,286,207
Q6	USP5,286,247
Q7	USP5,288,247
Q8	USP5,289,347
Q9	USP5,296,813
Q10	USP5,299,089
Q11	USP5,304,069
Q12	USP5,305,182
Q13	USP5,311,408
Q14	USP5,315,679
Q15	USP5,317,663
Q16	USP5,321,819

formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R16 do not disclose, at least, a module
R2	USP5,333,221	cap comprising a laser diode projection formed in a
R3	USP5,333,225	laser diode cavity and a photo diode projection
R4	USP5,337,391	formed in a photo diode cavity, such that the
R5	USP5,337,396	module cap is formed having the laser diode cavity
R6	USP5,340,340	into which a laser diode module is at least partially
R7	USP5,345,524	inserted and the photo diode cavity into which a
R8	USP5,345,530	photo diode module is at least partially inserted.
R9	USP5,353,364	
R10	USP5,353,634	
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	
R14	USP5,361,318	
R15	USP5,366,664	
R16	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S16 do not disclose, at least, a module
S2	USP5,383,793	cap comprising a laser diode projection formed in a
S3	USP5,388,995	laser diode cavity and a photo diode projection
S4	USP5,390,268	formed in a photo diode cavity, such that the
S5	USP5,393,249	module cap is formed having the laser diode cavity
S6	USP5,397,242	into which a laser diode module is at least partially
S7	USP5,398,154	inserted and the photo diode cavity into which a
S8	USP5,398,295	photo diode module is at least partially inserted.
S9	USP5,408,384	
S10	USP5,414,787	

S11	USP5,416,668
S12	USP5,416,870
S13	USP5,416,872
S14	USP5,419,717
S15	USP5,424,573
S16	USP5,428,703

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 through T4 do not disclose, at least, a module
T2	USP5,434,747	cap comprising a laser diode projection formed in a
T3	USP5,443,390	laser diode cavity and a photo diode projection
T4		formed in a photo diode cavity, such that the
		module cap is formed having the laser diode cavity
	USP5,446,814	into which a laser diode module is at least partially
		inserted and the photo diode cavity into which a
		photo diode module is at least partially inserted.
T5		This reference does not qualify as prior art.
	USP5,452,387	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
TC	LICDS 454 000	1994, in Japan.
T6	USP5,454,080	T6 through T9 do not disclose, at least, a module
T7	USP5,455,703	cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection
T8 T9	USP5,463,532	formed in a photo diode cavity, such that the
19		module cap is formed having the laser diode cavity
	USP5,469,332	into which a laser diode module is at least partially
	031 3,409,332	inserted and the photo diode cavity into which a
		photo diode module is at least partially inserted.
T10	USP5,470,257	These references do not qualify as prior art.
T11		Applicants have claimed priority to Japanese
	USP5,470,259	Application No. 06-086691, filed on April 25,
	, ,	1994, in Japan.
T12		T12 does not disclose, at least, a module cap
	·	comprising a laser diode projection formed in a
		laser diode cavity and a photo diode projection
	USP5,475,734	formed in a photo diode cavity, such that the
	051 3, 173,73 1	module cap is formed having the laser diode cavity
		into which a laser diode module is at least partially
		inserted and the photo diode cavity into which a
		photo diode module is at least partially inserted.
T13	USP5,477,418	These references do not qualify as prior art.
T14	110D5 450 050	Applicants have claimed priority to Japanese
	USP5,478,253	Application No. 06-086691, filed on April 25,
TD1.5	HODE 470 250	1994, in Japan.
T15	USP5,478,259	T15 and T16 do not disclose, at least, a module cap

T16		comprising a laser diode projection formed in a
		laser diode cavity and a photo diode projection
		formed in a photo diode cavity, such that the
	USP5,478,260	module cap is formed having the laser diode cavity
		into which a laser diode module is at least partially
		inserted and the photo diode cavity into which a
		photo diode module is at least partially inserted.

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 through U4 do not disclose, at least, a module
U2	USP5,482,658	cap comprising a laser diode projection formed in a
U3	USP5,487,678	laser diode cavity and a photo diode projection
U4		formed in a photo diode cavity, such that the
		module cap is formed having the laser diode cavity
	USP5,491,613	into which a laser diode module is at least partially
		inserted and the photo diode cavity into which a
		photo diode module is at least partially inserted.
U5		This reference does not qualify as prior art.
	USP5,491,712	Applicants have claimed priority to Japanese
į.		Application No. 06-086691, filed on April 25,
		1994, in Japan.
U6		U6 does not disclose, at least, a module cap
1		comprising a laser diode projection formed in a
		laser diode cavity and a photo diode projection
	USP5,494,747	formed in a photo diode cavity, such that the
	001 3,434,747	module cap is formed having the laser diode cavity
		into which a laser diode module is at least partially
		inserted and the photo diode cavity into which a
		photo diode module is at least partially inserted.
U7		This reference does not qualify as prior art.
	USP5,499,311	Applicants have claimed priority to Japanese
	031 3,477,311	Application No. 06-086691, filed on April 25,
		1994, in Japan.
U8		U8 does not disclose, at least, a module cap
		comprising a laser diode projection formed in a
		laser diode cavity and a photo diode projection
:	USP5,499,312	formed in a photo diode cavity, such that the
		module cap is formed having the laser diode cavity
		into which a laser diode module is at least partially
		inserted and the photo diode cavity into which a
170		photo diode module is at least partially inserted.
U9		This reference does not qualify as prior art.
	USP5,504,657	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.

U10	USP5,506,921	U10 through U14 do not disclose, at least, a
U11	USP5,506,922	module cap comprising a laser diode projection
U12	USP5,507,668	formed in a laser diode cavity and a photo diode
U13	USP5,526,235	projection formed in a photo diode cavity, such that
U14	USP5,527,991	the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
U15	USP5,534,662	These references do not qualify as prior art.
U16	USP5,535,296	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
V2	USP5,545,845	These references do not qualify as prior art.
V3	USP5,546,281	Applicants have claimed priority to Japanese
V4	USP5,547,385	Application No. 06-086691, filed on April 25, 1994, in Japan.
V5	USP5,548,641	V5 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V11 do not disclose, at least, a module
V8	USP5,554,037	cap comprising a laser diode projection formed in a
V9	USP5,567,167	laser diode cavity and a photo diode projection
V10	USP5,577,064	formed in a photo diode cavity, such that the

V11	USP5,580,269	module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 through V15 do not disclose, at least, a
V14	USP5,599,595	module cap comprising a laser diode projection
V15	USP5,600,470	formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art.
W2	USP5,631,998	Applicants have claimed priority to Japanese
W3	USP5,653,596	Application No. 06-086691, filed on April 25, 1994, in Japan.
W4	USP5,659,459	W4 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
W5	USP5,675,428	These references do not qualify as prior art.
W6	USP5,687,267	Applicants have claimed priority to Japanese
W7	USP5,717,533	Application No. 06-086691, filed on April 25,
W8	USP5,724,729	1994, in Japan.
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	

W15 USP5,797,771	
W16 USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art.
X2	USP5,879,173	Applicants have claimed priority to Japanese
		Application No. 06-086691, filed on April 25,
		1994, in Japan.
X3	DE.4239124 A1	X3 through X21 do not disclose, at least, a module
X4	EP 0 232792 A1	cap comprising a laser diode projection formed in a
X5	EP.0 228 278	laser diode cavity and a photo diode projection
X6	EP.0 305112 A2	formed in a photo diode cavity, such that the
X7	EP.0 314 651 A2	module cap is formed having the laser diode cavity
X8	EP.0 413 489 A2	into which a laser diode module is at least partially
X9	EP.0 437 161 A2	inserted and the photo diode cavity into which a
X10	EP.0 456 298 B1	photo diode module is at least partially inserted.
X11	EP.0 530 791 A2	
X12	EP.0 535 473 A1	
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	
X16	EP.0 652 696 A1	
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	
X20	WO 94/12900	
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y19 do not disclose, at least, a module
Y2	JP.2-181710	cap comprising a laser diode projection formed in a
Y3	JP.2-278212	laser diode cavity and a photo diode projection
Y4_	JP.2-87837	formed in a photo diode cavity, such that the
Y5	JP.3-20458	module cap is formed having the laser diode cavity
Y6_	JP.3-94869	into which a laser diode module is at least partially
Y7	JP.4-109593	inserted and the photo diode cavity into which a
Y8	JP.4-122905	photo diode module is at least partially inserted.
Y9	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	
Y12	JP.4-229962	
Y13	JP.4-230978	
Y14	JP.4-234715	

Y15	JP.4-270305	
Y16	JP.4-50901	
Y17	JP.4-87809	
Y18	JP.5-052802	
Y19	JP.5-134147	

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 through Z19 do not disclose, at least, a module
Z2	JP.5-188250	cap comprising a laser diode projection formed in a
Z3	JP.5-211379	laser diode cavity and a photo diode projection
Z4	JP.5-218581	formed in a photo diode cavity, such that the
Z5	JP.5-290913	module cap is formed having the laser diode cavity
Z6	JP.5-70955	into which a laser diode module is at least partially
<b>Z</b> 7	JP.61-158046	inserted and the photo diode cavity into which a
<b>Z8</b>	JP.61-188385	photo diode module is at least partially inserted.
Z9	JP.63-009325	
Z10	JP.63-16496	
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, a
AA2	U-63-16496	module cap comprising a laser diode projection
AA3	U-63-65967	formed in a laser diode cavity and a photo diode
AA4	U-63-65978	projection formed in a photo diode cavity, such that
AA5	U-63-82998	the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 through BB11 do not disclose, at least, a
BB2	Ronald LSoderstrom et al.,"An optical Date Link using a CD laser", SPIE Vol. 1577 High Speed Fiber Networks and Channels, pp. 163-173, 1991	module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode
BB3	BCP,Inc."Gigabits Over Multimode Optical Fiber"no date	projection formed in a photo diode cavity, such that

BB4	Ronald L.Soderstrom et al., "CD laser optical Date Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	the module cap is formed having the laser diode cavity into which a laser diode module is at least
BB5	FDDI Low-Cost Fiber Phyiscal Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	partially inserted and the photo diode cavity into which a photo diode module is at least partially
BB6	HP Module HFBR-5103, FDDI Data Sheet,http://www.hp.com/HP- COMP/fiber/hfbr5103.html,Jun.11,1998	inserted.
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System".www.patents.ibm.com/tdbs/tdb?ℴ=93A +60964,April 1993	
BB8	IBM, "A Proposal for a New High Performance "OptopElectronics Enterprise Oct.1992 ANSI Meeting,Oct.13,1992	
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver". Electronic Engineering Times, Aug. 1993.	

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Sandards?" no date.	CC3 through CC11 do not disclose, at least, a
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	projection formed in a photo diode cavity, such that
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	the module cap is formed having the laser diode
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd.,England,Apr. 1993.	inserted.
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454.definition of LED, Van Nostrand Reinhold Co.	
CC11	Edward R.Salmon, Encapsulation of Electronic Devices and Components, Marcel Deckker Inc., New York, 1987	

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conducive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD11 do not disclose, at least, a module cap comprising a laser diode projection
DD2	HEADS UpSumitomo Electric Lightwave joins Other in Announcement, May 11,1995	formed in a laser diode cavity and a photo diode
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	projection formed in a photo diode cavity, such that the module cap is formed having the laser diode
DD4	Shortwave Opto Assembly, IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev. 1, Jan. 6, 1993	cavity into which a laser diode module is at least partially inserted and the photo diode cavity into
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge", IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar., 1987	which a photo diode module is at least partially inserted.
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.	
DD7	Ronald LSoderstrom et al., A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD) FOC/LAN'87&MFOC-WEST,pp.383-385,no date.	
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	
DD9	Ronald L.Soderstrom et al., Optical Components and Electronic Packaging for High Performance Optical Date Links, THE RESEARCH INVESTMENT, p. 19-28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb. 1994 pp. 58,67.	

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute, 1996.	EE1 through EE11 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber, Van Nostrand Reinhold Publishing, 1983	projection formed in a photo diode cavity, such that the module cap is formed having the laser diode
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	cavity into which a laser diode module is at least partially inserted and the photo diode cavity into
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer date links", Fiber Optic Datacom and Computer Networks, SPIE-The International Society for Optical Engineerdings, Vol. 1577, pp. 174-181, 1988	which a photo diode module is at least partially inserted.
EE5	David A.Knodel et al.,"Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34, No.7B, Dec. 1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	

EE8	Minimizing Electrostatic Discharge to a Cartridge, IBM Technical Disclosure Bulletin, March 1987, https://www.delphion.com/tdb?o=87A%2060509, last visited Mar. 8, 2005.
EE9	K.P.Jackson et al., "High-Density, Array, Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings, IEEE Computer Society Press.
EE10	TDB:Stackable Circuit Card Packaging within a Logic Cage,IBM Technical Disclosure Bulletin,Dec.1992,https://www.delphion.com/tbds/tdb?o=92A%2063485,last visited Mar.8,2005
EE11	Jeff Hechi, The Laser Guidebook, 2nd ed., McGraw Hill, Inc., 1992

## Claim Chart for Claim 185 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A16 do not disclose, at least, a module
A2	USP2,899,669	cap comprising a laser diode projection formed in a
A3	USP3,264,601	laser diode cavity and a photo diode projection
A4	USP3,332,860	formed in a photo diode cavity.
A5	USP3,474,380	
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	
A14	USP3,805,116	
A15	USP3,809,908	
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B16 do not disclose, at least, a module
B2	USP4,047,242	cap comprising a laser diode projection formed in a
В3	USP4,156,903	laser diode cavity and a photo diode projection
B4	USP4,161,650	formed in a photo diode cavity.
B5	USP4,167,303	
В6	USP4,176,897	
B7	USP4,217,019	
B8	USP4,217,488	
B9	USP4,226,491	
B10	USP4,234,968	
B11	USP4,249,266	
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	
B15	USP4,273,413	
B16	USP4,276,656	

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 through C16 do not disclose, at least, a module
C2	USP4,295,181	cap comprising a laser diode projection formed in a
C3	USP4,301,543	laser diode cavity and a photo diode projection
C4	USP4,330,870	formed in a photo diode cavity.

C5	USP4,345,808	
C6	USP4,347,655	
C7	USP4,357,606	
C8	USP4,360,248	
C9	USP4,366,565	
C10	USP4,369,494	
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 through D16 do not disclose, at least, a module
D2	USP4,422,088	cap comprising a laser diode projection formed in a
D3	USP4,427,879	laser diode cavity and a photo diode projection
D4	USP4,430,699	formed in a photo diode cavity.
D5	USP4,434,537	
D6	USP4,437,190	
D7	USP4,439,006	
D8	USP4,446,515	
D9	USP4,449,244	
D10	USP4,449,784	
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	
D15	USP4,486,059	
D16	USP4,493,113	

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 through E16 do not disclose, at least, a module
E2	USP4,502,130	cap comprising a laser diode projection formed in a
E3	USP4,505,035	laser diode cavity and a photo diode projection
E4	USP4,506,937	formed in a photo diode cavity.
E5	USP4,510,553	
E6	USP4,511,207	
E7	USP4,514,586	
E8	USP4,516,204	
E9	USP4,519,670	
E10	USP4,519,672	
E11	USP4,519,673	

E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	
E16	USP4,529,266	

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F16 do not disclose, at least, a module
F2	USP4,531,810	cap comprising a laser diode projection formed in a
F3	USP4,533,208	laser diode cavity and a photo diode projection
F4	USP4,533,209	formed in a photo diode cavity.
F5	USP4,534,616	
F6	USP45,34,617	
F7	USP4,535,233	
F8	USP4,537,468	
F9	USP4,539,476	
F10	USP4,540,237	
F11	USP4,540,246	·
F12	USP4,541,036	
F13	USP4,541,685	
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 through G16 do not disclose, at least, a module
G2	USP4,545,074	cap comprising a laser diode projection formed in a
G3	USP4,545,077	laser diode cavity and a photo diode projection
G4	USP4,545,642	formed in a photo diode cavity.
G5	USP4,545,643	
G6	USP4,545,644	
G7	USP4,545,645	
G8	USP4,548,465	
G9	USP4,548,466	
G10	USP4,548,467	
G11	USP4,549,782	
G12	USP4,549,783	
G13	USP4,550,975	
G14	USP4,553,811	
G15	USP4,553,813	
G16	USP4,553,814	

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H16 do not disclose, at least, a module
H2	USP4,556,281	cap comprising a laser diode projection formed in a
Н3	USP4,556,282	laser diode cavity and a photo diode projection
H4	USP4,557,551	formed in a photo diode cavity.
H5	USP4,560,234	j
Н6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	
H12	USP4,580,872	
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 through I16 do not disclose, at least, a module
I2	USP4,634,239	cap comprising a laser diode projection formed in a
I3	USP4,641,371	laser diode cavity and a photo diode projection
I4	USP4,647,148	formed in a photo diode cavity.
15	USP4,652,976	
I6	USP4,663,240	
I7	USP4,663,603	
18	USP4,678,264	
<b>I9</b>	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
115	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J16 do not disclose, at least, a module
J2	USP4,762,388	cap comprising a laser diode projection formed in a
J3	USP4,767,179	laser diode cavity and a photo diode projection
J4	USP4,772,931	formed in a photo diode cavity.
J5	USP4,779,952	
J6	USP4,789,218	

J7	USP4,798,430	* " - "
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 through K16 do not disclose, at least, a module
K2	USP4,844,581	cap comprising a laser diode projection formed in a
K3	USP4,847,711	laser diode cavity and a photo diode projection
K4	USP4,847,771	formed in a photo diode cavity.
K5	USP4,849,944	
K6	USP4,857,002	
K7	USP4,862,327	
K8	USP4,872,212	
K9	USP4,872,736	
K10	USP4,881,789	
K11	USP4,884,336	
K12	USP4,897,711	
K13	USP4,906,197	
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L16 do not disclose, at least, a module
L2	USP4,955,817	cap comprising a laser diode projection formed in a
L3	USP4,963,104	laser diode cavity and a photo diode projection
L4	USP4,967,312	formed in a photo diode cavity.
L5	USP4,977,329	
L6	USP4,979,793	
L7	USP4,979,794	
L8	USP4,986,625	
L9	USP4,989,934	
L10	USP4,990,104	
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	

L14	USP5,006,286	
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M16 do not disclose, at least, a module
M2	USP5,035,641	cap comprising a laser diode projection formed in a
M3	USP5,040,993	laser diode cavity and a photo diode projection
M4	USP5,041,025	formed in a photo diode cavity.
M5	USP5,043,775	
M6	USP5,044,982	
M7	USP5,045,635	
M8	USP5,045,971	
M9	USP5,046,955	
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	
M16	USP5,086,422	

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991 .	N1 through N19 do not disclose, at least, a module
N2	USP5,093,879	cap comprising a laser diode projection formed in a
N3	USP5,094,623	laser diode cavity and a photo diode projection
N4	USP5,101,463	formed in a photo diode cavity.
N5	USP5,104,243	
N6	USP5,107,404	
N7	USP5,108,294	
N8	USP5,109,453	
N9	USP5,113,467	
N10	USP5,116,239	
N11	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	
N16	USP5,124,885	
N17	USP5,125,849	
N18	USP5,127,071	
N19	USP5,132,871	

Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O17 do not disclose, at least, a module
O2	USP5,134,679	cap comprising a laser diode projection formed in a
O3	USP5,136,063	laser diode cavity and a photo diode projection
04	USP5,136,152	formed in a photo diode cavity.
O5	USP5,136,603	
06	USP5,138,537	
Ο7	USP5,138,678	
08	USP5,140,663	
09	USP5,155,786	
O10	USP5,157,769	
O11	USP5,167,139	
O12	USP5,168,537	
O13	USP5,170,146	
O14	USP5,171,167	
O15	USP5,173,059	
O16	USP5,183,404	
017	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P17 do not disclose, at least, a module
P2	USP5,202,536	cap comprising a laser diode projection formed in a
P3	USP5,207,597	laser diode cavity and a photo diode projection
P4	USP5,212,752	formed in a photo diode cavity.
P5	USP5,212,754	
P6	USP5,218,519	
P7	USP5,225,760	
P8	USP5,233,676	
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	
P13	USP5,247,532	
P14	USP5,259,052	
P15	USP5,259,054	
P16	USP5,262,923	
P17	USP5,271,079	

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 through Q16 do not disclose, at least, a module
Q2	USP5,285,466	cap comprising a laser diode projection formed in a
Q3	USP5,285,511	laser diode cavity and a photo diode projection

Q4	USP5,285,512	formed in a photo diode cavity.
Q5	USP5,286,207	
Q6	USP5,286,247	
Q7	USP5,288,247	
Q8	USP5,289,347	
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R16 do not disclose, at least, a module
R2	USP5,333,221	cap comprising a laser diode projection formed in a
R3	USP5,333,225	laser diode cavity and a photo diode projection
R4	USP5,337,391	formed in a photo diode cavity.
R5	USP5,337,396	
R6	USP5,340,340	
R7	USP5,345,524	
R8	USP5,345,530	
R9	USP5,353,364	
R10	USP5,353,634	
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	
R14	USP5,361,318	
R15	USP5,366,664	
R16	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S16 do not disclose, at least, a module
S2_	USP5,383,793	cap comprising a laser diode projection formed in a
S3	USP5,388,995	laser diode cavity and a photo diode projection
S4	USP5,390,268	formed in a photo diode cavity.
S5	USP5,393,249	
S6	USP5,397,242	
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	

S11	USP5,416,668	
S12	USP5,416,870	
S13	USP5,416,872	
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 through T4 do not disclose, at least, a module
T2	USP5,434,747	cap comprising a laser diode projection formed in a
T3	USP5,443,390	laser diode cavity and a photo diode projection
T4	USP5,446,814	formed in a photo diode cavity.
T5		This reference does not qualify as prior art.
	USP5,452,387	Applicants have claimed priority to Japanese
	, ,	Application No. 06-086691, filed on April 25,
T(	LICDS 454 OOO	1994, in Japan.
T6	USP5,454,080	T6 through T9 do not disclose, at least, a module
T7	USP5,455,703	cap comprising a laser diode projection formed in a
T8	USP5,463,532	laser diode cavity and a photo diode projection
T9	USP5,469,332	formed in a photo diode cavity.
T10	USP5,470,257	These references do not qualify as prior art.
T11		Applicants have claimed priority to Japanese
	USP5,470,259	Application No. 06-086691, filed on April 25,
		1994, in Japan.
T12		T12 does not disclose, at least, a module cap
	USP5,475,734	comprising a laser diode projection formed in a
	0010,170,701	laser diode cavity and a photo diode projection
		formed in a photo diode cavity.
T13	USP5,477,418	These references do not qualify as prior art.
T14		Applicants have claimed priority to Japanese
	USP5,478,253	Application No. 06-086691, filed on April 25,
		1994, in Japan.
T15	USP5,478,259	T15 and T16 do not disclose, at least, a module cap
T16		comprising a laser diode projection formed in a
	USP5,478,260	laser diode cavity and a photo diode projection
		formed in a photo diode cavity.

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 through U4 do not disclose, at least, a module
U2	USP5,482,658	cap comprising a laser diode projection formed in a
U3	USP5,487,678	laser diode cavity and a photo diode projection
U4	USP5,491,613	formed in a photo diode cavity.
U5	USP5,491,712	This reference does not qualify as prior art.

		Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 through U15 do not disclose, at least, a
U11	USP5,506,922	module cap comprising a laser diode projection
U12	USP5,507,668	formed in a laser diode cavity and a photo diode
U13	USP5,526,235	projection formed in a photo diode cavity.
U14	USP5,527,991	
U15	USP5,534,662	These references do not qualify as prior art.
U16	USP5,535,296	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
V2	USP5,545,845	These references do not qualify as prior art.
V3	USP5,546,281	Applicants have claimed priority to Japanese
V4	USP5,547,385	Application No. 06-086691, filed on April 25, 1994, in Japan.
V5	USP5,548,641	V5 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25,

		1994, in Japan.
V7	USP5,554,031	V7 through V11 do not disclose, at least, a module
V8	USP5,554,037	cap comprising a laser diode projection formed in a
V9	USP5,567,167	laser diode cavity and a photo diode projection
V10	USP5,577,064	formed in a photo diode cavity.
V11	USP5,580,269	
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 through V15 do not disclose, at least, a
V14	USP5,599,595	module cap comprising a laser diode projection
V15	USP5,600,470	formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art.
W2	USP5,631,998	Applicants have claimed priority to Japanese
W3	USP5,653,596	Application No. 06-086691, filed on April 25, 1994, in Japan.
W4	USP5,659,459	W4 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
W5	USP5,675,428	These references do not qualify as prior art.
W6	USP5,687,267	Applicants have claimed priority to Japanese
W7	USP5,717,533	Application No. 06-086691, filed on April 25,
W8	USP5,724,729	1994, in Japan.
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art.

X2	USP5,879,173	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
X3	DE.4239124 A1	X3 through X21 do not disclose, at least, a module
X4	EP 0 232792 A1	cap comprising a laser diode projection formed in a
X5	EP.0 228 278	laser diode cavity and a photo diode projection
X6	EP.0 305112 A2	formed in a photo diode cavity.
X7	EP.0 314 651 A2	
X8	EP.0 413 489 A2	
X9	EP.0 437 161 A2	
X10	EP.0 456 298 B1	
X11	EP.0 530 791 A2	
X12	EP.0 535 473 A1	
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	
X16	EP.0 652 696 A1	
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	
X20	WO 94/12900	
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y19 do not disclose, at least, a module
Y2	JP.2-181710	cap comprising a laser diode projection formed in a
Y3	JP.2-278212	laser diode cavity and a photo diode projection
Y4	JP.2-87837	formed in a photo diode cavity.
Y5	JP.3-20458	
Y6	JP.3-94869	
Y7	JP.4-109593	
Y8	JP.4-122905	
Y9	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	
Y12	JP.4-229962	
Y13	JP.4-230978	
Y14	JP.4-234715	
Y15	JP.4-270305	
Y16	JP.4-50901	
Y17	JP.4-87809	
Y18	JP.5-052802	
Y19	JP.5-134147	

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 through Z19 do not disclose, at least, a module
Z2	JP.5-188250	cap comprising a laser diode projection formed in a
Z3	JP.5-211379	laser diode cavity and a photo diode projection
Z4	JP.5-218581	formed in a photo diode cavity.
<b>Z</b> 5	JP.5-290913	
Z6	JP.5-70955	
<b>Z7</b>	JP.61-158046	
Z8	JP.61-188385	
Z9	JP.63-009325	
Z10	JP.63-16496	
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, a
AA2	U-63-16496	module cap comprising a laser diode projection
AA3	U-63-65967	formed in a laser diode cavity and a photo diode
AA4	U-63-65978	projection formed in a photo diode cavity.
AA5	U-63-82998	

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 through BB11 do not disclose, at least, a
BB2	Ronald LSoderstrom et al.,"An optical Date Link using a CD laser", SPIE Vol. 1577 High Speed Fiber Networks and Channels, pp. 163-173, 1991	module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode
BB3	BCP,Inc. "Gigabits Over Multimode Optical Fiber"no date	projection formed in a photo diode cavity.
BB4	Ronald L.Soderstrom et al., "CD laser optical Date Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	
BB5	FDDI Low-Cost Fiber Phyiscal Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	
BB6	HP Module HFBR-5103, FDDI Data Sheet,http://www.hp.com/HP- COMP/fiber/hfbr5103.html,Jun.11,1998	
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System".www.patents.ibm.com/tdbs/tdb?ℴ=93A +60964,April 1993	

BB8	IBM, "A Proposal for a New High Performance "OptopElectronics Enterprise Oct.1992 ANSI Meeting,Oct.13,1992
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM,, FCSI-301-Rev1.0, Feb. 16, 1994.
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Sandards?" no date.	CC3 through CC11 do not disclose, at least, a
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	projection formed in a photo diode cavity.
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454. definition of LED, Van Nostrand Reinhold Co.	
CC11	Edward R.Salmon, Encapsulation of Electronic Devices and Components, Marcel Deckker Inc., New York, 1987	

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conducive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD11 do not disclose, at least, a module cap comprising a laser diode projection
DD2	HEADS UpSumitomo Electric Lightwave joins Other in Announcement,May 11,1995	formed in a laser diode cavity and a photo diode
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	projection formed in a photo diode cavity.
DD4	Shortwave Opto Assembly, IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev. 1, Jan. 6, 1993	
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge", IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar., 1987	
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.	

DD7	Ronald LSoderstrom et al., A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD) · · · FOC/LAN'87&MFOC-WEST,pp.383-385,no date.
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct. 1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.
DD9	Ronald L.Soderstrom et al., Optical Components and Electronic Packaging for High Performance Optical Date Links, THE RESEARCH INVESTMENT, p. 19-28 (no date).
DD10	Thomas & Betts INFO-LAN Modem 1998
DD11	"Active component manufacturers lower the cost of fiber to the desktop", Lightwave, Feb. 1994 pp. 58,67.

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Date Interface(FDDI)-Token Ring	EE1 through EE11 do not disclose, at least, a
	Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD), American National Standards	module cap comprising a laser diode projection
	Institute, 1996.	formed in a laser diode cavity and a photo diode
EE2	Communications Standard Dictionary,	projection formed in a photo diode cavity.
	p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	projection formed in a photo diode cavity.
EE3	"Transmitter/receiver assembly simplifies use of fibre	
	optics", Design Engineering,p.19,Button	
	Press, Ltd., April 1980.  Ronald L. Soderstrom et al., "CD laser as a fiber optic	·
EE4	source for computer date links", Fiber Optic Datacom	
	and Computer Networks, SPIE-The International	
	Society for Optical Engineerdings, Vol. 1577, pp. 174-181, 1988	
EE5	David A.Knodel et al.,"Open Fibre	
	Control,a laser safety interlock	
	technique", High-Speed Fiber Networks and	
	Channels, SPIE-The International Society	
	for Optical Engineering	
	Proceedings, Vol. 991, pp. 179-182, 1992	
EE6	"IBM Technical Disclosure Bulletin,	
	Electrostatic Dissipative Enclosed	
	Connector", Vol.34, No.7B, Dec.1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and	
	Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a	
	Cartridge,IBM Technical Disclosure Bulletin,March 1987,https://www.delphion.com/tdb?o=87A%2060509	
	,last visited Mar.8,2005.	
EE9	K.P.Jackson et al.,"High-Density, Алтау, Optical	
	Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings, IEEE Computer Society	
	Press.	
EE10	TDB:Stackable Circuit Card Packaging	
	within a Logic Cage, IBM Technical	
	Disclosure	
	Bulletin, Dec. 1992, https://www.delphion.co	
	m/tbds/tdb?o=92A%2063485,last visited	
	Mar.8,2005	
EE11	Jeff Hechi, The Laser Guidebook, 2nd	
	ed.,McGraw Hill,Inc.,1992	

DC2 733642